Rowan University

Graduate Catalog
2022–2023

22-160

Includes all graduate and post-baccalaureate programs

201 Mullica Hill Road
Glassboro, NJ 08028

rowan.edu/catalogs

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Rowan University In Brief

Type
Comprehensive, coeducational, non-sectarian, state-supported, public research university, opened in 1923.

Colleges and Schools
Business, Communication & Creative Arts, Education, Engineering, Humanities & Social Sciences, Performing Arts, and Science & Mathematics, Cooper Medical School of Rowan University, Graduate School of Biomedical Sciences, School of Earth and Environment, School of Nursing & Health Professions, Rowan-Virtua School of Osteopathic Medicine, the Division of Global Learning and Partnerships, the John H. Martinson Honors College, and the Rowan University School of Veterinary Medicine, which is expected to welcome its first class in Fall 2025.

Degrees
Bachelor of Arts (B.A.), Bachelor of Music (B.M.), Bachelor of Fine Arts (B.F.A.), Bachelor of Science (B.S.), Bachelor of Science Nursing (B.S.N.), Bachelor of General Studies (B.G.S.), Master of Arts (M.A.), Master of Business Administration (M.B.A.), Master of Education (M.Ed.), Master of Engineering Management (M.E.M.), Master of Music (M.M.), Master of Science (M.S.), Master of Science in Nursing (M.S.N.), Master of Science in Teaching (M.S.T.), Educational Specialist (Ed.S.), Doctor of Osteopathic Medicine (D.O.), Doctor of Education (Ed.D), Doctor of Medicine (M.D.), and Doctor of Philosophy (Ph.D).

Campuses
Main Campus – Glassboro, N.J. (approximately 20 miles southeast of Philadelphia), Camden, and Stratford.

Size
As of Fall, about 23,000 students.

Rowan's Proud History and Bright Future

In the course of more than nine decades, our diplomas have borne five names for our institution: New Jersey State Normal School at Glassboro (1923), New Jersey State Teachers College at Glassboro—also known as Glassboro State Teachers College (1937), Glassboro State College (1958), Rowan College of New Jersey (1992) and Rowan University (1997).

As the successive names suggest, the institution has continually reinvented itself. What started nearly a century ago as a small normal school to prepare teachers for South Jersey classrooms is today a multi-campus comprehensive public research university boasting prestigious accreditations and Carnegie R2 (high research activity) status.

In addition to the main Glassboro campus and long-standing Camden academic campus, Rowan has developed a thriving online education program, the South Jersey Technology Park in Mantua and Harrison townships, and Cooper Medical School of Rowan University in Camden. It has also integrated the Rowan-Virtua School of Osteopathic Medicine and Graduate School of Biomedical Sciences in Stratford and added a second campus in Sewell. Rowan is one of just three universities in the nation to offer both the M.D. and D.O. degrees.

Extraordinary growth and opportunity
Begun with just 236 students and 16 faculty, Rowan today enrolls about 23,000 students and employs more than 4,250 people, more than 2,505 of them faculty. The University offers 90 bachelor's degrees, 48 master's degrees, eight doctoral degrees, two professional (medical) degrees and roughly three dozen certificates across its academic colleges, schools and the multidisciplinary, recently renamed, John H. Martinson Honors College. The other colleges and schools include the:

- William G. Rohrer College of Business
- Ric Edelman College of Communication & Creative Arts
- College of Education
- Henry M. Rowan College of Engineering
- College of Humanities & Social Sciences
- Virtua Health College of Medicine & Health Sciences
- College of Performing Arts
- College of Science & Mathematics
- Graduate School of Biomedical Sciences
- School of Earth & Environment
- School of Innovation & Entrepreneurship
- Cooper Medical School of Rowan University
- Virtua Health School of Nursing & Health Professions
- Rowan-Virtua School of Osteopathic Medicine
- School of Translational Biomedical Engineering & Sciences

Rowan is noted for its student-faculty ratio of 17:1, similar to that of smaller, private schools. Exceptionally gifted students find even greater academic challenge in the endowed, interdisciplinary Bantivoglio Honors program. Among Rowan's brightest, 25 students have earned coveted Fulbright Program scholarships since 2000. Others qualified for prestigious Goldwater and Boren awards.

Accolades and headlines

Since 2001, Rowan University consistently has placed in regional and national indexes, including The Chronicle of Higher Education 2022 Almanac, which named Rowan the nation's fourth fastest-growing public doctoral institution for the third consecutive year and its fourth year in the top 10.

Also in 2022:

- U.S. News & World Report ranked Rowan #88 among national public research universities and the Henry M. Rowan College of Engineering #19 among programs that primarily enroll undergraduates.
- the Broadcast Education Association placed the Ric Edelman College of Communication & Creative Arts #9 overall in international rankings, with radio/television/film programs #3 in audio, #6 for documentary, #9 in film and video, and #18 for news programming.
- Rowan's entrepreneurship program earned a top 50 rank nationally and #12 in the Northeast from The Princeton Review, in partnership with Entrepreneur Magazine.

Two of Rowan's most celebrated moments came during events that earned international attention. While still called Glassboro State College and best known for excellent teacher education programs, the institution in 1967 became the focus of the world when it hosted the landmark summit conference between U.S. President Lyndon Johnson and Soviet Premier Alexei Kosygin. Today, Hollybush Mansion displays memorabilia from the momentous international event, as well as local history.

The institution again gained worldwide attention in 1992 when businessman Henry Rowan and his wife, Betty, contributed $100 million to the school. The gift was the largest to date made to a public institution, granted with the request to transform engineering education. The gift allowed the school to create the award-winning and highly ranked Henry M. Rowan College of Engineering and served as a catalyst for growth and change throughout the institution, renamed to honor its donors.

Milestones and goals

Rowan's extraordinary growth and success reflect the University's determination to address changing demands in education, health care, business and more. Rowan's resources and influence are driving the region's economic growth, especially through public-private partnerships, research collaboration and commercialization.

Drawing on institutional agility, strength and vision that continue to shape its future, Rowan University has in just the last decade:

- nearly doubled enrollment to 23,000, while maintaining quality and increasing diversity to 36%;
- more than tripled research awards and earned Carnegie R2 research status for high research activity. The classsification makes possible more undergraduate and graduate programs and enhances Rowan's increased focus on research initiatives and developing marketable solutions for real-world problems;
- announced its affiliation with Virtua Health to create an academic health system that will transform and advance medical and health sciences education, clinical care, and research, supported by Virtua's $85 million philanthropic investment;
- began the process to create New Jersey's first School of Veterinary Medicine, planned to open in 2025;
- exceeded its ambitious goal for Rising: The Campaign for Rowan University. More than 22,000 donors gave more than $120 million to support new discoveries, create inspiring spaces for learning and living, and most importantly, improve the lives of students;
- completed the $426 million public-private redevelopment project that brought housing, office, classroom, professional and retail space and revitalized the corridor that joins the Glassboro main campus to the historic downtown;
- formed one of the nation's first university divisions designed to support diversity, equity, and inclusion;
- invested in, partnered and encouraged more than $1.58 billion in construction and design projects on and around Rowan campuses that built new academic, research, and clinical facilities, plus private and public development;
- integrated the Rowan-Virtua School of Osteopathic Medicine and the Graduate School of Biomedical Sciences in Stratford, nationally known for clinical services and research supported by prestigious private and public funders;
- opened Cooper Medical School of Rowan University in Camden, offering the first four-year M.D. program in southern New Jersey. The innovative curriculum and urban-based mission of the School address the State's most pressing medical education challenges;
- opened Discovery Hall and new buildings for the Henry M. Rowan College of Engineering and the William G. Rohrer College of Business to help accommodate students and develop more partnerships with business, industry, K-12 schools and the community at large;
- preserved a historic tract in Mantua Township, the site of paleontology research for decades, with plans to open the Jean & Ric Edelman Fossil Park & Museum in 2023, supported by the alumni donors' commitment to STEM education;

- partnered with community colleges in South Jersey to improve access to and affordability of obtaining four-year undergraduate degrees. Though still independent, the institutions changed their names to Rowan College at Gloucester County (2014), now Rowan College of South Jersey, and Rowan College at Burlington County (2015) to reflect the closer ties;
- opened a new facility to expand osteopathic medical education and Rowan Medicine clinical services in Sewell;
- responded to the coronavirus pandemic with an unprecedented effort to provide remote learning, protect health and safety and provide more than 60,000 COVID-19 vaccinations, among other innovations and interventions with private and public health partners.

Poised for the future

Building on its proud and proven record for nearly 100 years, Rowan continues to develop students to help lead New Jersey's bright future. Many are the first in their family to earn a college degree (first-generation college students make up about a quarter of enrollment) and most will be long-term New Jersey residents, helping build thriving communities and businesses as they invest themselves in their neighborhoods and professions.

With a remarkable history, proud alumni, able partners, and extraordinary potential, Rowan University is dedicated to leading progress, creating opportunities, and encouraging excellence. This is the legacy of Rowan University. This is the pride of all who are part of the Rowan community.

Mission

Rowan seeks to improve and expand the model for public higher education by being inclusive, agile, and responsive, offering diverse scholarly and creative educational experiences, pathways, environments, and services to meet the needs of all students; maintaining agility by strategically delivering organizational capacity across the institution, and responding to emerging demands and opportunities regionally and nationally.

Rowan's Strategic Pillars are:

Access

Rowan is committed to expanding quality educational opportunities for students by increasing our enrollment capacity; supporting student success; utilizing an increasing array of pedagogies and platforms; and creating new pathways to undergraduate, graduate, post-graduate and professional studies.

Affordability

We are committed to keeping education affordable by managing costs, diversifying our revenue streams, limiting student debt, restricting tuition increases to the rate of inflation, and enhancing internship and employment opportunities for students and graduates.

Quality

We are committed to providing rigorous and engaging educational experiences; supporting scholarly, creative and research activities; maintaining a vibrant and healthy campus life with a richly intellectual, cultural, and artistic environment, and ensuring a safe, supportive and inclusive culture that respects and values the diversity of all of our members.

Economic Engine

Rowan is committed to benefiting our local and state communities by partnering with and investing in regional businesses and organizations that contribute to furthering our mission; preparing an educated citizenry and skilled workforce; enhancing the health of our citizens and the quality of life; and developing innovative products, services, and ideas.

Using This Catalog

Rowan University has multiple catalogs:

- The Undergraduate Catalog includes the program requirements and course descriptions for all traditional-format undergraduate programs (courses offered on-campus and across 16-weeks each term).
- The Graduate Catalog includes program requirements and course descriptions for all graduate and post-baccalaureate programs.
- The Cooper Medical School of Rowan University (CMSRU) Catalog describes the curriculum and policies for the Doctor of Medicine (MD) program.
- The Rowan-Virtua School of Osteopathic Medicine Catalog describes the curriculum and policies for the Doctor of Osteopathic Medicine (DO) program.
- The Graduate School of Biomedical Sciences (GSBS) Catalog describes the curriculum and policies for the academic programs offered by GSBS.

Academic Calendar 2022-2023

Fall Semester 2022

Labor Day (no classes)	Monday, September 5
Semester Classes Begin	Tuesday, September 6
Thanksgiving Recess (no classes)	Thursday-Saturday, November 24-26
Reading & Review (no classes)	Wednesday, December 14
Finals Week	Thursday-Wednesday, December 15-21 (includes Saturday, December 17)
Flexible Time Day	Thursday, December 22

Spring Semester 2023

Semester Classes Begin	Tuesday, January 17
Spring Break	Monday, March 13-Saturday, March 18
Reading & Review (no classes)	Friday, April 28
Final Exam Week	Saturday-Friday, April 29-May 5 (includes Saturday, April 29)
Commencement Week	Saturday, May 6; Monday-Friday, May 8-12

Summer Sessions 2023

Memorial Day (no classes)	Monday, May 29
Fourth of July (no classes)	Tuesday, July 4

Summer Sessions are Subject to Change. Visit the Office of Winter, Summer, and Special Sessions for the Term calendars www.rowan.edu/winter/summer/calendars.

NOTE:

Please note that this calendar applies to traditional programs offered on the Glassboro and Camden campuses during the fall and spring semesters. Visit www.rowan.edu/university/academic/calendars and use the links listed for calendars from The Division of Global Learning & Partnerships, Office of Winter, Summer, and Special Sessions, the Cooper Medical School of Rowan University, the Rowan-Virtua School of Osteopathic Medicine, and the Graduate School of Biomedical Sciences.

About the Division of Global Learning & Partnerships

The Division of Global Learning & Partnerships in Brief

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The Division of Global Learning & Partnerships is Rowan University's vehicle to identify and meet the specific needs of the adult student population. Our students include recent college graduates pursuing graduate or doctoral studies, returning college students pursuing the completion of a baccalaureate degree, employees/employers seeking professional development, and life-long learners seeking personal enrichment. The Division places foremost emphasis on making quality education accessible, convenient, and affordable through delivery modes that address the vast range of adult student learning needs and preferences. In partnership with Rowan University's academic colleges and schools, Rowan Global currently offers several doctoral/specialist level programs (including both Ph.D. and Ed.D. programs), over 50 master's level programs (including concentrations), more than 50 graduate-level and post-baccalaureate certificate programs and endorsements, and more than a dozen of undergraduate degree-completion programs.

Rowan Global course/program offerings and corresponding services are classified into four major categories:

- **Traditional-format graduate-level** (including post-baccalaureate, master's and doctoral) courses/programs for both part-time and full-time students. Courses are commonly face-to-face, 16 weeks, and held on one of Rowan's campuses.
- **Non-traditional format courses/programs at every level** (undergraduate, post-baccalaureate, master's, and doctoral). Courses are offered online, hybrid, off-site, at our partner college campuses, in an accelerated 7-week timeline, or some combination of these.
- All Rowan University **summer and intersession** courses.
- **Professional development and personal enrichment** non-credit courses, workshops, and seminars.

Locations and Campus Information

The Division of Global Learning & Partnerships is located on Rowan University's Main Campus in Glassboro, New Jersey, and in the University District in Camden, New Jersey. Additional offices are also located on our community college partners' campuses.

Rowan Global's Glassboro campus is housed inside the Enterprise Center, a mixed-use facility on the recently developed Rowan Boulevard next to the Barnes and Noble University Bookstore, and among several eateries, health services, and luxury apartments and condominiums.

The Camden campus is located in the historic First National Bank and Trust Company building and annex, on the corner of Cooper and Broadway. The Camden campus provides an array of services for students, faculty, and staff, including access to the Barnes and Noble University District Bookstore and Café and the Rutgers University Paul Robeson Library.

Rowan Global's Camden campus offers undergraduate degree-completion programs in Law and Justice, Sociology, Human Services, and Disaster Preparedness and Emergency Management; graduate programs in Education; and several academic enrichment programs designed to advance access to higher education among diverse populations, including the acclaimed Intensive English Language Program for English Language Learners (IELP) and the Achieving Success through Collaboration, Engagement, and Determination (ASCEND) program.

While parking privileges are available on both campuses, Rowan University also provides a daily courtesy shuttle that runs between the Glassboro and Camden campuses.

Rowan Global Policies

Every student pursuing studies at Rowan University is expected to adhere to the university's policies and procedures outlined on the Rowan University Policies website located at University Policies.

The Rowan University Policies website provides information regarding policies and practices applied university-wide to undergraduate, graduate, and post-baccalaureate students. The University expects students to access and review the website in order to remain informed of university-wide rules, regulations, and practices in the Rowan catalog or issued by the faculty, administration, and the Rowan University Board of Trustees.

In addition to university-wide policies on the Rowan University Policies website, students enrolled in programs or courses offered by Rowan Global should be aware that they may be required to follow additional and/or different policies, practices, and/or deadlines, such as application deadlines, registration deadlines, and dropping, adding, or withdrawing from courses/programs. These policies are located here at University Policies. Any questions regarding Rowan Global policies may be directed to the Rowan Global Office of Academics & Outreach.

Office of Academics & Outreach

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The Office of Academics & Outreach works closely with Rowan University's academic and partner colleges, schools, and off-site partners to present innovative programs that meet the needs of contemporary learners and their desired academic and career paths.

The unit oversees the coordination of nationally and internationally acclaimed programs of undergraduate study, graduate study, including master and doctoral level programs, along with certificates of undergraduate study (CUGS), graduate study (COGS) and advanced graduate study (CAGS). The unit also houses non-credit programs for learners seeking to gain general knowledge, learn new or upgrade existing skills through an online learning platform offering self-paced guided projects and on-demand courses. Academics & Outreach develops, promotes, and celebrates programs that are delivered at several convenient times/locations in various modes of delivery, and provides oversight and administrative support for all Rowan University program development, updates, and launches.

Academics & Outreach works collaboratively with admissions, marketing, enrollment, and the academic colleges to ensure the successful inception, development, and sustaining of successful programming. The office maintains a strong relationship with and provides support to the Upsilon Chapter of Alpha Epsilon Lambda (AEL), an honor society dedicated to graduate and professional students that participates in charitable-related activities.

Rowan Online

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Rowan Online is responsible for online learning, instructional design, online technologies, and webs services for Rowan University. The Rowan Online instructional design team works carefully with faculty to design courses in the online and hybrid format. Rowan Online provides customer service and support for students using online technologies and related services. Students who are enrolled in online or hybrid courses are granted the same access to Rowan's state-of-the-art facilities and on-campus resources.

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The Office of Advising & Student Information Services (OASIS) provides onboarding, registration support, academic advising, and related services to students enrolled in undergraduate, post-baccalaureate, graduate, and certificate programs administered by Rowan Global.

In collaboration with Rowan University faculty and staff, OASIS provides outstanding service and expedient access to higher education for a growing population of national and international students across a range of course delivery modes, including face-to-face, hybrid, and fully-online programs.

Academic Advising

OASIS assists students at all levels with registration and financial/tuition concerns; provides clarity on university processes and policies; supports students as they transition into the higher education environment; and identifies and resolves student matters regarding all aspects of academic engagement.

Undergraduate students enrolled in degree completion programs offered online, at the Camden campus, and through our community college partners (RCBC, RCSJ, and Camden CC) are advised by OASIS primary-role academic advisors.

Graduate, post-baccalaureate, and certificate students are assigned a faculty advisor through their program's academic department; in addition, OASIS advising generalists also assist graduate-level students with a variety of personal, academic, and administrative concerns throughout their enrollment at Rowan.

Credit for Prior Learning

Rowan Global Learning & Partnerships encourages undergraduate students to seek college credit for prior learning. Prior Learning Assessment, the evaluation of knowledge and competencies for the purpose of awarding college credit, validates the level of knowledge gained from other sources of experiential learning. Institutional credit for prior learning pathways offer adult, returning, and other non-traditional learners the opportunity to accelerate degree completion through the demonstration of college-level competencies and knowledge gained outside the university setting. College-level learning may result from various life experiences, including business ownership, civic leadership, workplace training, volunteer work, military training, nationally recognized licensure, and union-sponsored apprenticeships. Individualized assessments may include professional credentials, standardized tests, military transcripts, institutional credit by examination, and in certain cases, portfolio assessment. College credit is awarded based on the demonstration of college-level learning and not for experience alone.

Adult learners, returning to college or just beginning, who wish to explore available Credit for Prior Learning opportunities may contact Rowan Global Learning & Partnerships' Office of Advising & Student Information Services (OASIS) at globalstudent@rowan.edu for additional information.

Transfer Credit Processing

Graduate students seeking to transfer credits to Rowan must submit a Graduate and Post-Bac Transfer Credit Evaluation Form (available for download on the Student Success website) and all required supporting materials (official transcripts, syllabi, course descriptions) at the time of application.

Most graduate degree programs at Rowan University allow incoming matriculated students to transfer up to twelve (12) graduate-level credits (six (6) credits for certificate programs) provided that a grade of B or better was earned, the courses and credits are deemed equivalent to required courses and credits in the program, and the coursework was taken within the past 10 years. For the transfer credit policy for a particular graduate program, please contact the program's Academic Advisor.

Rowan Global undergraduates with questions or concerns about transfer of credit should contact registrar-transfercredits@rowan.edu for assistance.

Registration

For matriculated Rowan Global students, registration plans vary according to program. Information regarding how and when to register will be included in student orientation and registration information provided post-matriculation. Any registration-related questions should be directed to OASIS staff at globalstudent@rowan.edu .

Senior Privilege

The Office of Advising & Student Information Services coordinates the Senior Privilege process at Rowan that allows qualified students to enroll in up to six (6) credits of graduate-level courses prior to completion of a Bachelor's degree and while paying the undergraduate tuition rate. Seniors (students with 90+ earned hours) at Rowan University who have at least a 3.00 cumulative undergraduate GPA may request permission to register for one graduate level course per semester through the Senior Privilege process by submitting the appropriate form (available on the Student Success website) to the Office of Advising & Student Information Services before the close of registration for the term in question. For more details about this policy and process, please consult: Senior Privilege Policy

Office of Winter, Summer, and Special Sessions

Steven C. Farney, Sr.
Senior Director, Administration & Operations
Enterprise Center, Third Floor
856.256.5189
farney@rowan.edu

Marie Dionisi
Coordinator
Enterprise Center, Third Floor
856.256.5123
dionisi@rowan.edu or winterandsummer@rowan.edu

Web: https://global.rowan.edu/summer-winter/index.html
Facebook: www.facebook.com/RowanOWSS
Twitter: twitter.com/RowanOWSS
Instagram: instagram.com/rowanowss

The Office of Winter, Summer, and Special Sessions celebrates a year-round college experience for students. Rowan University hosts a combination of its own graduate and undergraduate students, as well as visiting students from local, regional, national, and international universities. Through accelerated Winter and Summer courses, students earn credits to stay on track in a four-year program, graduate early, earn credits towards an additional program of study, and/or complete academic and professional programs for employment growth and opportunities. Winter and Summer sessions are offered online, hybrid, and face-to-face to accommodate a sizable and diverse population of learners.

Additionally, the Office of Winter, Summer, and Special Sessions coordinates special efforts to offer college credit-bearing courses to high achieving high school juniors and seniors at a reduced tuition rate through the Rowan University College Acceleration Program (CAP) and High School Online Dual Credit Initiative. Rowan University courses offered through CAP and the High School Online Dual Credit Initiative fulfill several of Rowan University's general education requirements and are designed to be transferable to other institutions of higher education.

Rowan Global Marketing and Enrollment Management

Main phone: 856.256.4747
global@rowan.edu

Jennifer Moore
Assistant Vice President, Enrollment Management and Marketing
Enterprise Center, Second Floor
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moorejen@rowan.edu

Eric Brennan
Assistant Director of Admissions & Enrollment Management
Enterprise Center, Second Floor
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brennane@rowan.edu

The Division of Global Learning & Partnerships coordinates all admissions and admissions-related activities for Rowan Global academic programs.

Applying to Rowan Global

Admission to Rowan University as an undergraduate, post-baccalaureate, or graduate-level student is competitive. All applicants are admitted according to the standards and requirements established by Rowan's academic departments. Each component of the application is carefully reviewed and taken into consideration for each candidate. Additional policies and information about Rowan Global Admissions and applying can be found at https://global.rowan.edu/admissions/index.html.

Eligibility for Admissions

Admission requirements for each academic program offered through the Division of Global Learning & Partnerships at Rowan University can be found at https://global.rowan.edu/programs/index.html.

- Undergraduate admission: Rowan Global offers non-traditional degree-completion (transfer) programs for undergraduate students. Any applicant who has completed 24 or more college credits at another institution is considered a transfer student. Students seeking a second bachelor's degree are also considered transfer students,

- whether they graduated from Rowan or from another institution. Most undergraduate-level programs at Rowan require a minimum GPA for admission. However, meeting that minimum does not guarantee admission due to competition for available openings. Admission decisions for applicants who've attended college more than five years ago are based on motivation, life experiences, career advancement, and college transcripts.
- Post-baccalaureate and graduate admission: To be admitted to a post-baccalaureate or graduate-level program at Rowan University, an applicant must have earned a baccalaureate degree from a regionally-accredited college or university in the United States or its equivalent from a foreign institution of higher education. Faculty-admission committees for post-baccalaureate and graduate-level programs use different evaluation criteria, according to the requirements of the profession and the number of applicants applying to the program.
- To apply to a Rowan Global program (undergraduate, post-baccalaureate, or graduate-level) please visit https://global.rowan.edu/programs/index.html and click on your program of interest for information and links to application deadlines and instructions.

Honors Admission for Rowan Graduates

Rowan undergraduate students who have graduated within the last three years, or Rowan seniors in their final semester, are exempt from paying an application fee and from taking standardized tests (except where it is necessary to meet standards recommended by accrediting bodies, certification agencies, statutory regulations, and/or professional societies) *if* they have achieved a cumulative GPA of 3.8 or greater in their undergraduate coursework and meet all other admission requirements.

Non-U.S. Transcript/Academic Credentials Requirements

Any Rowan Global applicants (regardless of U.S. citizenship) who attended a non-U.S. institution for more than one term and/or who earned a Bachelor's degree (or its equivalent) and/or Master's degree (or its equivalent) from a non-U.S. institution or where English was not the official language of instruction is required to submit to Rowan Global Admissions official English translations (if transcript is not in English) *and* a course-by-course transcript evaluation to determine equivalency. Acceptable evaluation agencies* are:

- World Education Services (WES) (www.wes.org)
- Educational Credentials Evaluators (ECE) (www.ece.org)
- Josef Silny (www.jsilny.com)

**Note: Rowan University has no affiliation with these companies and may accept an evaluation from other companies under special circumstances; however, the above agencies are proven to provide fast and accurate services to students and their evaluations are trusted by colleges throughout the U.S.*

English-language Proficiency Requirements for Non-native Speakers

International applicants are required to submit official copies of successful scores from one of the two tests listed below. (This requirement is waived for any applicant whose first language is English, any applicant who has been studying or working in the U.S. for two or more years, or whose undergraduate institution uses English as the language of instruction. Other ESL programs do not qualify.)

- TOEFL (Test of English as a Foreign Language) (www.toefl.org). Minimum required scores are: 525 or higher - paper test; 70 or higher - internet test; 213 or higher - computerized test
- IELTS (International English Language Testing System) (www.ielts.org). Minimum required score is 6.0.
- PTE (Pearson Test of English) (https://pearsonpte.com/). Minimum required score is 50.

Additional Requirements for International Applicants

At Rowan University, non-U.S. citizens requiring the F-1 or J-1 visa must complete two separate processes to be admitted to the University and to be considered for the Rowan-sponsored I-20 necessary to obtain the proper visa.

- The first process is the academic admissions process. All applicants must submit complete application packets including all required materials for their particular program of interest by the appropriate deadline to Rowan Global Admissions and be evaluated for admission and matriculation into a full-time academic program.
- The second process is the financial review, which is coordinated independently by the International Center (IC) at Rowan University. Applicants must complete all of the steps outlined by the IC in order to demonstrate that they have the financial resources necessary to support themselves for the duration of their studies at Rowan. Without complete information and appropriate certification, Rowan's International Center cannot issue the I-20 necessary to obtain an F-1 or J-1 visa. For a full list of financial review requirements and instructions please visit www.rowan.edu/internationalstudents.

General Information about Standardized Tests

Tests scores must be no older than five years and must be official reports submitted to Rowan Global Admissions directly from the testing agency*. Applicants must designate Rowan University as a recipient of their test scores or scores will not be released. (Only the most recent exam results are used for admission purposes.) Rowan's code for most standardized tests is 2515 except for the ACT (not required of graduate students) which is 2560, and the IELTS and GMAT, which both include instructions for proper score submission at the time of testing.

**Some testing agencies may only provide an address for "The Graduate School." If that is the only option available, select it, but please include a note on the application indicating that test scores were sent to that address.*

Changing Academic Program after Matriculation

Matriculated students who have already begun a program, may decide that a different Rowan program better suits their needs. If that is the case, students must complete a new online application for their program of interest and also indicate in the "Change of Program" section of the application that they are a currently enrolled student. Depending upon the admission requirements of the new program, additional materials may need to be submitted. Any questions about the COP process should be directed to the enrollment counselor assigned to the new program of interest.

Graduate & Post-Baccalaureate Programs

All post-baccalaureate and graduate-level programs (including doctoral, master level, and professional certificates) offered at Rowan University are administered by the Division of Global Learning & Partnerships and housed across the academic colleges of Business, Communication & Creative Arts, Education, Engineering, Health Sciences, Humanities & Social Sciences, Performing Arts, Science & Mathematics; the schools of Earth & Environment and Nursing & Health Professions; and Graduate School of Biomedical Sciences, Cooper Medical School of Rowan University, and Rowan-Virtua School of Osteopathic Medicine.

The role of the Division of Rowan Global Learning & Partnerships (Rowan Global) is to provide leadership, coordination, and administrative support for quality post-baccalaureate and graduate-level programs at Rowan University, as consistent with national, state, and regional educational needs. Led by the Senior Vice President of the Division of Global Learning & Partnerships and professional staff of Rowan Global, the Graduate Council, and the academic program advisors/faculty, the post-baccalaureate and graduate experiences are integral components of the overall mission of the University.

Graduate-level programs at Rowan provide those who already possess bachelor's or master's degrees an opportunity to continue to advance their education.

Rowan University Degrees Offered:

- B.A., B.F.A., B.M., B.S., B.S.N., B.G.S., M.A., M.B.A., M.B.S., M.Ed., M.E.M., M.M., M.S., M.S.N., M.S.T., Ed.S., D.O., Ed.D., M.D., Ph.D.
- Certificates of Advanced Graduate Study (CAGS; post-master)
- Certificates of Graduate Study (COGS; post-baccalaureate)
- Certificates of Undergraduate Study (CUGS)
- Professional Certificates

Post-Baccalaureate programs are non-degree, undergraduate programs that enable bachelor degree holders to obtain professional certifications in a variety of areas. The requirements and curricula of the post-baccalaureate programs are often similar to the requirements and curricula listed for the corresponding undergraduate degree programs and may also have the same national accreditation and/or state approval (in the case of College of Education certifications) as the corresponding undergraduate degree programs.

State certifications/endorsement programs (also post Bachelor) for school nursing, principals, supervisors, teacher of students with disabilities, driver education, learning disabilities teacher consultant (LDTC), bilingual/bicultural education, English as a Second Language

Credit requirements for each program vary greatly according to level, degree and professional standards. Many programs will accept transfer credit from accredited institutions. For a full list of programs offered through Rowan Global, please visit https://global.rowan.edu/programs/index.html.

Rowan Global serves the adult non-traditional student population by offering programs and courses that meet the needs of individuals with busy personal and professional lifestyles. Consequently, several programs are available in an accelerated format, and/or online, hybrid, or face-to-face formats at a number of locations outside of the Rowan University Main Campus. Program formats and locations are provided in the Graduate Catalog (for all graduate and post-baccalaureate programs) under the "Programs Offered" section for each academic college.

Note: Admission to all post-baccalaureate and graduate programs at Rowan University (both traditional-format and non-traditional-format) is coordinated by Rowan Global Admissions (globaladmissions@rowan.edu or https://global.rowan.edu.)

Office of the President

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The President works with the Board of Trustees and the Executive Cabinet to determine the vision and strategy for the University. The President's Office is comprised of the President, his Chief of Staff, and the Director of Operations/Deputy Board Liaison.

Division of Academic Affairs & Student Affairs

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Scott Woodside
Director, Wellness Center
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The Academic Affairs Division is headed by the Provost or Chief Academic Officer. The Provost reports directly to the President and is responsible for leadership and oversight of academic programs, faculty affairs, and library services. The Deans of the Colleges of Business, Communication & Creative Arts, Education, Engineering, Performing Arts, Humanities & Social Sciences, Science & Mathematics, and Honors; Schools of Earth and Environment and Nursing & Health Professions; and the Cooper Medical School, the Rowan-Virtua School of Osteopathic Medicine, and the Graduate School of Biomedical Sciences report to the Provost. The Vice President for Academic Affairs, Associate Provosts for Academic Affairs and Library Information Services, and the Director of the International Center also report to the Provost. The

Director of the Faculty Center for Excellence in Teaching and Learning, University Registrar and Director of Assessment report to the Vice President for Academic Affairs.

Academic Affairs

Roberta Harvey
Vice President for Academic Affairs
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Center for Academic Innovation

A primary focus of the Center is to engage internal and external stakeholders in the creation of educational experiences to prepare students for successful careers, meaningful lives, and continuous learning. Business and community outreach, pathway building, curriculum design, marketing, recruitment, program delivery, and assessment are brought together in the development process from idea to launch. The Center mobilizes the competitive advantages of the University as a premium provider of academic credentials and leverages these advantages to deliver learning opportunities to new populations and next generations of students

Faculty Affairs

Mariano J. Savelski
Vice Provost for Faculty Affairs
Bole Hall
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Faculty Center for Excellence in Teaching and Learning

Jill Perry
Director
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The Faculty Center for Excellence in Teaching and Learning creates valuable and appropriate connections across campus in order to facilitate individuals growth as engaged university citizens; and serves faculty, pertinent supporting offices, and the institution in pursuit of teaching, scholarship and creative excellence. The Center's three areas of activity are 1) induction and ongoing support of faculty; 2) professional development focused on research-based and culturally responsive teaching practices, acquisition of skills to support diverse learners, and academic career progress; and 3) institutional change relevant to diversity, equity and inclusion in teaching, scholarship and creative activities. Programming is designed to encourage reflective pedagogy and assist in creating an equitable learning environment for all faculty and students. The Center encourages self-directed inquiry through various modes including programs, learning communities, affinity and discussion groups, and conference participation.

Our Goals:

- Promote a high standard of quality teaching and learning encompassing a commitment to diversity, equity and inclusion.
- Support junior faculty throughout the tenure and recontracting process
- Support faculty in development of inclusive teaching principles
- Create an inclusive community with equitable opportunities for all faculty
- Represent the interests of teaching and learning at the university
- Build faculty leadership capability
- Maintain currency in the field

The International Center

Gokhan Alkanat
Associate Provost for International Education
Hawthorn Hall, Room 313
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alkanat@rowan.edu & rowanic@rowan.edu

www.rowan.edu/internationalcenter

The International Center (IC) supports the internationalization and globalization of Rowan University by offering comprehensive services in the following areas:

- Creation and cultivation of partnerships with overseas institutions
- Cultural adjustment of international students
- English Language Program
- Immigration advising for international students and scholars
- International Travel Policy
- Study Abroad programs

Rowan University Libraries

Robert Hilliker
Associate Provost for Library Information Services
Keith and Shirley Campbell Library
856.256.4988
hilliker@rowan.edu

Rowan University Libraries supports the University's educational and research mission through the judicious selection, management, promotion, and training in the use of information resources and services. Rowan University Libraries provides the Rowan community with access to an extensive range of resources and services, which are accessible through four physical libraries and through the Libraries' website. Reference librarians are available in all libraries for research consultation and to assist patrons in identifying, locating, accessing, and evaluating both print and online resources.

Keith and Shirley Campbell Library

The Keith and Shirley Campbell Library, the main library, is on the Glassboro campus. Opened in 1995, the 118,000 sq. ft. facility, houses nearly 350,000 print books, multimedia materials, periodicals, newspapers, and special collections in a variety of formats. Rowan University Libraries subscribes to 95,000 online journals and thousands of other e-resources that are available 24/7 through the Libraries' website. The collection includes nearly 800,000 e-books. Librarians are available to assist students virtually via "Ask a Librarian chat, email, and text services. Rowan s Libraries participate in a number of local consortia groups to provide patrons with materials not available to them at Rowan University.

Campbell Library staff provide orientations, tours, and workshops throughout the academic year. A 30-workstation lab is available for student use, as well as library instruction, on the first floor. Additional computer workstations are also available on the second and third floors. And, 17 group study rooms are available throughout the building for use by students.

Digital Scholarship Center

Campbell Library also houses the Digital Scholarship Center, a collaborative environment to support Rowan community members in the exploration of emerging digital technologies. Students, faculty, and staff are welcome to bring projects to work on collaboratively. They can access technology resources available through the Rowan Cloud and brainstorm projects with trained library staff. And, they can engage in self-paced technology discovery.

The Performing Arts Collection

Located on the second floor, the Collection offers specialized information services and instruction for students and faculty. The Performing Arts Collection houses significant collections of scores, CDs, scripts, and recordings. Specialty databases are available through the Rowan University Libraries website.

University Archives and Special Collections

University Archives and Special Collections are housed on the third floor of the Campbell Library. Historic state documents and materials on the history of Rowan University are primary sources useful for study. The collection has grown to include a wide range of important source materials beginning with the Colonial and Revolutionary eras. Researchers and scholars from across the nation use these important collections. The University Archives include items from the historic summit in 1967 between President Lyndon Johnson and Soviet Premier Aleksei Kosygin, which took place at the Hollybush mansion on campus.

The CMSRU Library

The CMSRU Library, located inside Cooper Medical Center, serves the faculty, staff, and students of CMSRU; Cooper Medical Center; and members of the Rowan University community. The Library houses a small collection of print books and journals in the clinical and basic sciences. The bulk of the collection is comprised of electronic books, journals, databases, and related specialty collections. These are linked via the library website and are available to users 24/7. There is also a Learning Commons located inside the CMSRU building.

The Rowan SOM Health Sciences Library

The Health Sciences Library is located in the Academic Center building. It serves all students, faculty, and staff on the Stratford Campus, as well as members of the Rowan University community. The Library houses an extensive collection of print books and journals in the clinical and basic sciences. In addition, a collection of electronic journals, electronic books, and a wide variety of image databases and collections are available through the Libraries' web page.

Office of the University Registrar

Linda Drexel
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drexel@rowan.edu

registrar@rowan.edu

The Office of the University Registrar oversees registration and registration-related issues for all of Rowan's undergraduate and graduate (non-medical) students. The Registrar coordinates compliance with the Statewide Transfer Agreement and provides resources for transfer students, including the management of ongoing transfer credit articulations and credit postings for individual undergraduate and graduate students. In addition, the Office has oversight for student records, including transcripts, enrollment verifications, coordination of graduation audits, and the awarding of all Rowan degrees, certificates, and diplomas. The Office also coordinates updates to official curriculum in the system, including programs and courses. The Registrar works closely with all academic colleges as well as University Scheduling, the Offices of Admissions, Advising and Student Retention, and directly supports the Office of Academic Affairs.

Non-matriculated students

(Not admitted to a degree or certification programs)

- **Undergraduate courses**: Non-matriculated students with a high school diploma or its equivalent may register for undergraduate courses for which they are otherwise eligible. Non-matriculated undergraduate students are not permitted to register for more than 11.5 credits in any term or accumulate more than a total of 24 undergraduate credits prior to formal acceptance into an undergraduate program. To inquire about registering for coursework as a non-matriculated undergraduate student, please visit www.rowan.edu/registrar.
- **Post-baccalaureate courses**: Non-matriculated undergraduate students who have already earned a Bachelor's degree are not permitted to accumulate more than a total of 6 undergraduate-level credits prior to formal acceptance into a post-baccalaureate program. To inquire about registering for coursework as a non-matriculated post-baccalaureate student, please visit www.rowan.edu/registrar.
- **Graduate courses**: Non-matriculated students with a Bachelor's degree or its equivalent may register for graduate courses for which they are otherwise eligible. Non-matriculated graduate students are not permitted to accumulate more than a total of 9 graduate credits prior to formal acceptance into a graduate program. To inquire about registering for coursework as a non-matriculated graduate student, please visit www.rowan.edu/registrar.

Courses taken as a non-matriculated student are not guaranteed to count toward a future Rowan program. Not all courses are open for registration to non-matriculated students. Please click on the course registration number (CRN) in the Rowan Section Tally to view any prerequisites or restrictions assigned to that course.

Non-matriculated students pay for their coursework according to the tuition rate assigned to the course level for each course for which they register. (For tuition rates, consult www.rowan.edu/bursar.)

Student Affairs

Rory McElwee
Vice President for Student Affairs
856.256.5187
mcelwee@rowan.edu

Student Affairs provides numerous services to support all students in achieving their academic, career, and personal goals. With a focus on student holistic well-being, dedicated professionals provide expert support and intervention for students through University Advising Services, Student Support Services, Tutoring, Success Coaching, Exploratory Studies & Pre-Business Programs, Degree Completion Initiatives, Accessibility Services, Military Services, Testing Services, the Office of Career Advancement, and the Office of Pre-Health Programs.

Academic Success Center & Office of Accessibility Services

John Woodruff
Director
Savitz Hall, Third Floor
856.256.4259
successcenter@rowan.edu

The Academic Success Center provides a myriad of comprehensive programs and services that assist students in enhancing and maximizing their academic potential from Orientation through Graduation. The Center provides services in the following areas: military services, accessibility services, testing, and an array of academic support workshops. Accessibility Services provides accommodations and assistance to students with various documented disabilities in accordance with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act (ADA) of 1990. Students who meet University admissions requirements (i.e., otherwise qualified to attend the University) are required to submit appropriate documentation so that the University can determine whether they qualify for reasonable accommodations. Military Services handles all military education benefits and provides support services for our student veterans and programming for the campus community to recognize and appreciate their contributions.

Military Services

Beth Sosnoski
Military Services Coordinator/SCO
Savitz Hall, Room 304
856.256.4233
militaryserviceoffice@rowan.edu

The Military Services Office at Rowan University is the liaison with the Regional Processing Office in Buffalo, New York, to assist veterans and dependents of veterans with their education benefits. The Military Services Office also provides programming and resources for the campus community.

To qualify for veterans' benefits, you must be enrolled in a degree-seeking program. If you are entering Rowan University for the first time and believe you are eligible for veterans' educational assistance, schedule an appointment with the Office of Military Services. The office has both day and evening hours to ensure access to all veteran students seeking information and assistance.

In order to receive benefits every semester, students are required to fill out semester forms with the Military Services office. This should be done as soon as you register for classes to ensure you receive your benefits in a timely manner. The Military Services Office is going to be your point of contact on campus for any questions/concerns regarding your benefits.

Active Duty/Training Orders

Please provide copies of any active duty or training orders to our office as soon as possible. We will send out an official letter via Rowan Success Network to your professors letting them know that you are on orders during this time frame. This official letter will also provide them with rights and responsibilities for both the student and professor.

In accordance with Title 38 US Code 3679 subsection (e), this school adopts the following additional provisions for any students using U.S. Department of Veterans Affairs (VA) Post 9/11 G.I. Bill® (Ch. 33) or Vocational Rehabilitation & Employment (Ch. 31) benefits, while payment to the institution is pending from the VA. Rowan University will not: prevent the student's enrollment; assess a late penalty fee to the student; require the student to secure alternative or additional funding; deny the student access to any resources (access to classes, libraries, or other institutional facilities) available to other students who have satisfied their tuition and fee bills to the institution. However, to qualify for this provision, such students will be required to provide the Military Services Office with required semester forms and any other forms needed by the university.

Office of Pre-Health Programs
Grace Farber, Director
Keyona Renee Walker, Coordinator
healthadvising@rowan.edu

The Office of Pre-Health Programs strives to provide Rowan students, from all majors, with the appropriate information and resources to develop competitive, well-rounded applications to the various professional graduate programs. The Office will invite these graduate programs to campus to educate students on all aspects of the application process. In addition, the Office will introduce Rowan students to additional careers and provide workshops that cultivate an environment in which students are equipped to address current and emerging health issues in the community.

Tutoring Center
Laura Repsher
Assistant Director
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856.256.4462
tutoring@rowan.edu

Tutoring is available free of charge to all Rowan University undergraduate students. The Tutoring Center provides small-group or drop-in tutoring in most subject areas. Students may request academic assistance on a one time basis or may be scheduled for regular assistance on a weekly basis throughout the semester. The purpose of tutoring is to complement classroom instruction, not replace it. Workshops on learning strategies and effective study techniques are presented at various times throughout the academic year.

University Advising and Student Support Services
Amy Ruymann
Director
Savitz Hall, Room 316
856.256.5563

University Advising Services, UAS, is an organization of professional academic advisors within the Student Success area of the Division of Student Affairs. The hallmarks of UAS advising are exceptional student-centeredness and responsiveness; excellence in advisor training and ongoing professional development; adherence to standard advising services and protocols; and collaboration with academic units and other campus personnel and services. UAS works to construct a collaborative, learning-centered environment committed to engaging students in the development and implementation of meaningful educational goals, informed academic planning, and major selection consistent with their personal values, interests, and abilities. We also provide our students guidance with regard to effective navigation of university systems and processes. UAS partners with Departments and Colleges to provide and coordinate advising services to Rowan students in specific majors. UAS offers a range of services, including individual appointments, walk-in hours, group advising sessions in or out of class sessions, and more.

University Advising Center (UAC)
Carol Eigenbrot
Associate Director
Savitz Hall, Third Floor
856.256.4459
eigenbrotc@rowan.edu

The University Advising Center (UAC) serves as the advising hub for advising related services and information. In addition, academic advisors in the UAC advise all Exploratory Studies and Pre-Business students and all students considering changing their major, as well as students in select majors.

College of Education Advising Center
Dorothy Abruzzo-Klumpp
Associate Director
Herman D. James Hall, Second Floor
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The College of Education Advising Center provides academic advising for students enrolled in College of Education programs and selected School of Nursing & Health Professions programs. Additionally, informational meetings are available for students considering these programs.

UAS Services for CHSS, ECCCA, SEE, and CPA
Julia Beth Rey
Associate Director
Herman D. James Hall, Third Floor
856.256.5871

UAS Services for CSM and SNHP
John (Jay) Dukenski
856.256.5859
dukenski@rowan.edu

Student Support Services
Erin Hannah
Associate Director
856.256.5749

Student Life/Dean of Students

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856.256.4909
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The Division of Student Life encompasses several key areas at Rowan University committed to attracting high caliber students and retaining them through graduation. In short, we are a division dedicated to our students' success. Student Life includes the departments of Community Standards, Greek Life, Orientation and Student Leadership Programs, Recreation Center, Residential Learning and University Housing, Student Activities, Student Center, Student Enrichment and Family Connections, Student Government Association, Student Organizations, Volunteerism, Community Engagement, & Commuter Services, and Off-Campus Housing resources. Our main office is in Savitz Hall; however, Student Life is literally all over Rowan. While you may not have realized it, we met you before you first stepped foot on campus, we'll advise you while you're here and, hopefully, our impression will stay with you long after you leave. The Division of Student Life provides support, engagement, experiential, and retention programs for students from their first semester through their graduation.

Outstanding Financial Obligations

The University may deny a student graduation, readmission, registration, or records because of outstanding financial obligations to the University. This action may be taken in cases where reasonable notice of a debt and the consequences of nonpayment have been given to the student. If a student does not meet his/her outstanding obligations by the established deadlines under the policy, the student will automatically be denied registration for the following semester, in addition to losing all other university services. Denial for future semesters will also be continued until such time as the obligation is met. The student will have the right to a hearing in cases of dispute concerning an obligation. The request for a hearing must be submitted in writing by the student to the appropriate department or office head in which the obligation exists. If it becomes necessary, any appeal of a decision resulting from such a hearing must be arranged through the collection manager, Business Office, Savitz Hall, or Dean of Students, Savitz Hall. The University will have the right to withhold the degree and all records, including certification, transcripts, placement services, etc., pending satisfactory financial arrangements. A complete text of the Outstanding Financial Obligations Policy may also be obtained from the collection manager, the business office, or the Dean of Students in Savitz Hall.

Campus Recreation
Kevin George
Director
856.256.4927
georgek@rowan.edu

www.rowan.edu/rec

Campus Recreation is committed to providing exceptional programs, services, and facilities that promote and encourage a balanced, healthy lifestyle. We are dedicated to creating a safe, welcoming, and inclusive environment that enhances student learning and skill development, fosters enjoyment and appreciation for recreational life, and enriches the quality of life for the Rowan Community.

The Recreation Center is a three-story, 76,000 square foot recreational activities facility. The building houses an eight-lane swimming pool, a three-lane indoor track, a three-court multi-sport gymnasium, five racquetball courts (one used for indoor cycling) and a group exercise room. The facility also has a 9,000 square foot fitness and weight room, conference room, locker/shower facilities, and inclusive restrooms. The main desk of the facility operates as ID access/control area, equipment checkout center, and as the program/membership registration area.

The Satellite Fitness Center is located on the corner of Mick Dr. and Victoria St. and encompasses over 17,000 square feet. The building offers a free weight room, spaces for functional training, connected cardiovascular equipment, non-motorized equipment, various multi-functional strength systems, and a men s, women s and inclusive locker/shower rooms.

The Recreation Center offers 18 hour days and the Satellite Fitness Center offers 16 hour days during the academic year, with modified hours during the weekends, holidays, and breaks over the course of the year.

Access to facilities, programs, and services is granted to full time students with a current and active Rowan ID card. Students taking 6 or fewer credits may purchase a membership.

Campus Recreation offers a broad range of programs and services; coordinating or co-sponsoring over 200 programs annually in the following programmatic areas: intramural sports, fitness and wellness, aquatics, sport clubs, informal recreation and special events. Although the foundation of our department rests on serving student recreational needs as a priority, we are also committed to a broader constituency.

Community Standards
Brandy Bennett
Assistant Director
Chamberlain Student Center, Suite 210
856.256.5491
bennettb@rowan.edu

The Office of Community Standards articulates and upholds the standards of behavior expected within the University community. The office addresses violations of the student code of conduct through the university disciplinary system to ensure respect for all members of the community and the maintenance of a collaborative and learning-centered environment.

Student Center & Campus Activities
Joe Lizza, Ed.D.
Director
856.256.4696
lizzaj@rowan.edu

The Chamberlain Student Center & Campus Activities (SCCA) team is committed to providing a safe, welcoming, and inclusive environment for all members of the Rowan University community. Through quality programs, services, and facilities, the SCCA creates opportunities for student engagement and learning, stimulates personal development, and contributes to building campus community in collaboration with university partners.

Everyone who walks through the doors of the Chamberlain Student Center will experience the best services, programs, and staff while developing a lifelong connection to the University.

Volunteerism, Community Engagement & Commuter Services
Andrew Perrone
Assistant Director
Chamberlain Student Center, Suite 210
856.256.4597
perrone@rowan.edu

The Office of Volunteerism, Community Engagement & Commuter Services provides programming, resources, and support to promote a Rowan community of active citizens. We work collaboratively with university faculty and community partners to design a range of curricular and co-curricular service-learning opportunities. Students who engage with service learning, volunteerism and community engagement at Rowan will reflect on meaningful volunteer experiences as they develop a lifelong commitment to their communities. We also collaborate with Glassboro Administration and officials to assist with community concerns that may arise related to Rowan students sharing community life with residential neighbors. Furthermore, the VCECS office also provides programming and support resources geared towards Rowan University s commuter student population.

Wellness Center at Winans Hall

Counseling and Psychological Services
Scott Woodside
Director for the Wellness Center
Wellness Center at Winans Hall
856.256.4333
wellnesscenter@rowan.edu

Counseling and Psychological Services (CPS) at the Wellness Center provides free confidential mental health and substance abuse services to enrolled students. CPS provides individual and group counseling, triage and emergency evaluations, brief consultation and outreach programming throughout the entire calendar year. Some common areas addressed in counseling for undergraduate and graduate students include addressing academic stressors, coping with personal and family relationship issues, stress and anxiety management, coping with depression, eating and body image issues, dealing with grief and loss, trauma and substance use. Every semester we provide a variety of workshops, skills classes and group therapy options that focus on LGBTQIA+ issues; BIPOC student experiences; anxiety and depression management; grief and loss; and general distress.

The University's Stress Management and Response Team (SMART) is coordinated through the Wellness Center and each professional staff is a core member of the team. This university-wide group is available to meet with various divisions, departments, organizations, and groups on campus in order to assist with response to traumatic events that impact particular groups of students or the university community as a whole.

Healthy Campus Initiatives
Allie Pearce, MA
Assistant Director, Healthy Campus Initiatives
Wellness Center at Winans Hall
856.256.4333
hci@rowan.edu

Healthy Campus Initiatives (HCI) at the Wellness Center educates students about making healthy decisions and choices regarding their personal wellness that will enhance their college experience. All members of the Rowan community are encouraged to attend workshops, programming, and campus events aimed at increasing knowledge and developing attitudes and beliefs that promote health and wellness in several areas. These areas include suicide prevention and sexual health.

Shreiber Family Pet Therapy Program
Michele Pich
Assistant Director, Shreiber Family Pet Therapy
Wellness Center
856.256.7380
wellnesscenter@rowan.edu

The Shreiber Family Pet Therapy Program at the Wellness Center provides a variety of Animal-Assisted Activities (including Animal-Assisted Therapy) to support student health and well-being. The program partners with the other departments in the Wellness Center and other offices on campus. These partnerships include: the Division of Diversity, Equity & Inclusion (DEI) [such as: the Social Justice, Inclusion & Conflict Resolution Center (SJICR)]; Academic Affairs (such as: Disability Services, and, the Autism PATH Program; Military Services; and, Admissions); and the Early Childhood Demonstration Center. Partnerships also include student clubs such as: the Pre-Vet Club, and the Animal Advocacy Club.

Student Health Services
Scott Woodside
Director for Student Health Services
Wellness Center
856.256.4333
wellnesscenter@rowan.edu

Student Health Services (SHS) at the Wellness Center strives to remove health-related barriers to learning, to promote optimal wellness, to enable students to make informed decisions about health issues, and to empower students to be self-directed and well informed health care consumers.

Licensed physicians, nurse practitioners and registered nurses provide quality, professional healthcare to all students who are matriculated and currently enrolled at Rowan University.

All incoming matriculated students must provide SHS with a complete health record that can be downloaded from our website. This packet has simple, yet detailed information regarding your immunization history and other health requirements that must be submitted by July 15th (December 15th for Spring admission).

All matriculated students are required to have health insurance as a condition of full time enrollment at Rowan University. To enroll in the health insurance plan offered by United Healthcare, visit www.firststudent.com and follow the instructions. To waive the Rowan University health insurance plan, visit the Health Insurance tab on the Bursar's Office website, www.rowan.edu/bursar, and follow the instructions. Failure to waive the United Insurance plan will result in automatic enrollment into the plan. Further information is available at the "Health Insurance" or the "Mandatory Pre-Entrance Health Forms" tabs at the left on our website www.rowan.edu/health.

Division of Diversity, Equity and Inclusion

Monika Williams Shealey
Senior Vice President
Savitz Hall, Second Floor
856.256.4751
shealey@rowan.edu

Penny McPherson-Myers
Vice President
Savitz Hall, Second Floor
856.256.4086
mcphersonp@rowan.edu

The Division of Diversity, Equity and Inclusion at Rowan University leads and supports initiatives that promote diversity, equity and inclusion by developing and sustaining meaningful partnerships with internal and external constituents that result in a more diverse and inclusive community; utilizing data to inform continuous improvement efforts and innovation; and implementing university-wide culturally responsive and relevant programming that result in equitable educational opportunities for students and an affirming culture and climate. The departments reporting to the Division are Social Justice, Inclusion and Conflict Resolution; Center for Neurodiversity; Office of Student Equity and Compliance; Center for Access, Persistence, and Achievement; Diversity, Equity and Inclusion at Rowan SOM; and the Faculty Center for Excellence in Teaching and Learning is shared with the Division of Academic Affairs.

Diversity, Equity and Inclusion Council

The Division of Diversity, Equity and Inclusion Council is comprised of university administrators, faculty, staff from each Division, College and department, as well as undergraduate and graduate student representatives, responsible for leading in the development, implementation, and monitoring of the university's diversity strategic action plan. The DEI representatives are from the following groups: academic units (Diversity Committee Chairs/Associate Deans), Student Enrollment Management, Advising, Student Affairs, Admissions, International Center, Faculty Center, Academic Success Center, OSEC, CAPA, SJICR, Public Safety, Alumni Engagement, Advancement, Diversity Faculty Senate Committee, Office of Research, Library Services, Wellness Center, Facilities, Human Resources, General Council, Library services, and student leaders.

Social Justice, Inclusion and Conflict Resolution

Dominique Pierson
Assistant Director of Social Justice, Inclusion, and Conflict Resolution Initiatives
Hawthorn Hall, Room 203
856.256.5479
socialjustice@rowan.edu

Formed through the collaborative efforts of students, faculty and staff, the Office of Social Justice, Inclusion and Conflict Resolution is committed to establishing transformative educational experiences. Through culturally sustaining practices we aim to cultivate leadership, identity development, and global citizenship by empowering our community at Rowan and beyond. The office provides dedicated physical space and resources for underrepresented and underserved students at Rowan University. The office serves as an umbrella for the following programs and centers:

Harley E. Flack Student Mentoring Program
856.256.5861
harleyflackmentoring@rowan.edu

The Harley E. Flack Student Mentoring Program was founded in 1992, and provides a comprehensive array of mentoring services. Services are designed and delivered using methods based on strong evidence, which indicates that these programs support retention and student success.

Multicultural Center
Hawthorn Hall, Room 213
856.256.4448
multicultural@rowan.edu

The Multicultural Center is an evolution of the long established Office of Multicultural Affairs, which has been merged into the new structure. The Multicultural Center serves as a resource for students from diverse cultural and identity groups, and is intended to promote the celebration of diversity, development of cross cultural understanding and competency, and inclusion of diverse people in the Rowan community.

Interfaith and Spiritual Exploration Center
Evergreen Hall, Room 180
856.256.5447
interfaith@rowan.edu

The Interfaith and Spiritual Exploration Center aims to promote a campus environment that is inclusive of students' religious and spiritual identities and allows for expression and exploration of spiritual and religious beliefs and values. Programs and initiatives of the center will advance understanding and appreciation of the contributions of communities of faith.

LGBTQIA+ Center
Hawthorn Hall, Room 214
856.256.5495
LGBTQ@rowan.edu

The LGBTQIA+ Center located in the Office of Social Justice, Inclusion, and Conflict Resolution (SJICR) aims to create a safe space for students who identify as LGBTQIA+ and support students' exploration of their identity. SJICR staff working to fulfill the goals of this center advocate for campus inclusion of the LGBTQIA+ community at Rowan.

Women's Center
Hawthorn Hall, Second Floor
856.256.5862
socialjustice@rowan.edu

The Women's Center develops programming aimed at addressing the needs of all women and empower students to promote a campus community inclusive of all genders and respectful of gender differences. Programs and initiatives of the center will support efforts to address inequity, promote understanding of women's and gender issues, and create a space for women to build bridges and a strong sense of community.

Center for Neurodiversity

Chiara Latimer
Co-Director

John Woodruff
Co-Director

Laurel Hall, First Floor
856.256.3790
neurodiversity@rowan.edu

The Center for Neurodiversity is a cultural center within Rowan University's Division of DEI. The Center for Neurodiversity situates neurodiversity in DEI initiatives recognizing that all aspects of human diversity are natural and valuable (dis/ability, race, ethnicity, gender identity, sexuality, etc.). The mission of the center is to provide programming, research and community engagement that value and prioritize neurodiversity culture. The Center for Neurodiversity defines neurodiversity culture as group belonging and pride formed around shared lived experiences, personal disability identity, and social justice activism.

Office of Student Equity and Compliance

Monise Princilus
Associate Vice President and Title IX Coordinator
Savitz Hall, Second Floor
856.256.5440
princilus@rowan.edu

https://sites.rowan.edu/diversity-equity-inclusion/departments/osec/index.html

The Office of Student Equity and Compliance (OSEC) serves as the main contact for all Title IX and Title VI-related issues at Rowan University. Title IX of the Education Amendments of 1972 is a federal law that prohibits sex discrimination in all educational settings for both students and employees. The law states: "No person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving Federal financial assistance." *To report a Title IX matter, CLICK HERE.*

Title VI of the Civil Rights Act of 1964 prohibits discrimination on the basis of race, color or national origin in any program or activity receiving Federal financial assistance. As such, the University is dedicated to providing an environment free from discrimination on the basis of disability, gender identity and expression, national origin, race or ethnicity, religion, sex, sexual orientation, age, color, veteran status, genetic information or any other protected classification. *To report a Title VI matter, CLICK HERE.*

Center for Access, Persistence & Achievement

Dawn Singleton
Assistant Vice President, Student Success and Inclusion Programs
Savitz Hall, Suite 345
Camden Academic Building, Room 218

Achieving Success through Collaboration, Engagement and Determination (ASCEND)
Dawn Singleton
Assistant Vice President, Student Success and Inclusion Programs
ASCEND Glassboro
Savitz Hall, Suite 345
856.256.4080
ascend@rowan.edu

ASCEND Camden
Camden Academic Building, Room 218
856.361.2930
ascend@rowan.edu

The ASCEND program is an educational pipeline scholarship program for first generation, underrepresented, and/or low income students which utilizes a series of intentional programming to support students in the program. Within the ASCEND program there are a few components: the Educational Opportunity Fund Program (EOF) and the RISE Scholarship Program.

The EOF program provides access, preparation, orientation, and academic support for students who are among the first in their family to attend college, and for those who otherwise may face unique challenges in college due to economic, cultural,

or educational circumstance.

To be considered for the EOF program, students must complete the Common Application and select EOF. The four main requirements for EOF applicants are:

1. At least one year residency in New Jersey.
2. A background of historical poverty as indicated by the Free Application for Federal Student Aid (FAFSA) and supporting documentation.
3. Potential for college level success as demonstrated by an interview, letters of recommendation, etc.
4. A High School or General Equivalency Diploma.

The RISE Program is a special admissions scholarship program designed for highly motivated students who may not meet Rowan University's regular admission criteria nor the EOF financial criteria, but would benefit from additional academic support and resources. There is no financial eligibility criteria for the RISE program. However, students are required to complete the FAFSA.

To be considered for the RISE program, students must submit the Common Application. Admissions officers identify potential candidates, review admission information and conduct student interviews to determine admittance. Selected students of the ASCEND program are conditionally admitted and required to participate in a six week summer bridge program. This program provides college survival skills, leadership skills, academic coursework and support, STEM enrichment activities, and orientation for transition into the University environment. During the summer program, the ASCEND staff evaluates the students' demonstrated ability to successfully transition into Rowan University and makes a recommendation regarding the appropriateness of fall admission.

ASCEND students are assigned an ASCEND counselor to provide a broad range of academic and personal support services, including counseling, tutoring, and leadership development from freshman year through graduation. ASCEND Counselors interact with students in individual and small group settings. Financial assistance is provided to qualified students.

Creating Higher Aspiration and Motivation Project (CHAMP)
Winona Wigfall
Director
Camden Academic Building, Second Floor
856.361.2920
wigfall@rowan.edu

The Creating Higher Aspiration and Motivation Project (CHAMP) serves approximately 300 6th through 12th grade Camden City middle and high school students annually, with college access activities. CHAMP provides participants with a solid foundation to aid them with support necessary to successfully complete secondary education and post-secondary programs leading to careers in fields in which persons from minority and/or disadvantaged backgrounds are underrepresented, such as engineering, computer science, medicine, environmental science, etc.

The program includes a six-week summer enrichment program, with a goal of increasing students' math, science, English, public speaking and computer science knowledge and skills. Emphasis is placed on self-esteem, social and cooperative skill building and career exploration. The academic year program includes after school tutoring, in and out of school counseling and mentoring, Saturday field trips and educational activities, as well as trips to colleges and universities. PSAT/SAT instruction is offered twice a week as well as assistance with college applications and financial aid forms.

The program is supported by funds from the U.S. Department of Education administered through New Jersey Higher Education, NJ College Bound Grant Program, Camden City Public Schools and Rowan University.

Louis Stokes Alliance for Minority Participation
Dawn Singleton
Assistant Vice President, Student Success and Inclusion Programs
Savitz Hall, Suite 345
singleton@rowan.edu

The Louis Stokes Alliance for Minority Participation (LSAMP) is part of a national effort to increase the number of underrepresented minority students who successfully complete baccalaureate and advanced degrees in Science, Technology, Engineering and Mathematics (STEM) disciplines. Funding for the LSAMP program is provided by the National Science Foundation (NSF). Rowan University is one of nine institutions that comprise the consortium called the Greater Philadelphia Region Louis Stokes Alliance for Minority Participation. This consortium represents a diverse partnership of Historically Black Colleges and Universities (HBCUs), both public and private two- and four-year research and non-research institutions.

The Louis Stokes Alliance for Minority Participation at Rowan University, partners with the ASCEND program, academic colleges, the Division of University Research, student groups, and other University stakeholders to broaden the participation of underrepresented students in STEM majors. The ultimate goal of this program is to diversify the STEM workforce. This is done by facilitating and identifying professional development opportunities including but not limited to seminars, conferences, internships, cooperative employment experiences, research or civic engagement. The program also encourages students to pursue advanced degrees in STEM.

The Launch Pad at Camden (TLP)
Dawn Singleton
Assistant Vice President, Student Success and Inclusion Programs
Camden Academic Building, First Floor

TLP is a comprehensive college access and pipeline program that provides dual credit and early college course work, student success resources, intentional recruitment and financial aid resources for high school students participating in dual credit and early college course work on the Camden campus.

TLP provides academic support and resources to academically promising high school students, who demonstrate a financial need and/or no family history of college. TLP also provides social and financial support to students and their families. TLP will partner with the surrounding community and local school districts to provide early college development pathways and student success programming.

Upward Bound Program
Margie Olivencia
Coordinator
Camden Academic Building, Third Floor
856.361.2937
olivencia@rowan.edu

The Upward Bound program is a federally funded program that provides opportunities for students from low-income families and/or first generation college bound students, to succeed in college. The Upward Bound program at Rowan Camden is serves English Language Learners-students from Camden high schools who participate in their school's bilingual or ESL program.

DEI at RowanSOM

Yvonne Torruella Ortiz
Director of Diversity, Equity and Inclusion
Stratford Campus, Academic Center, Room 308
856.566.6414
ortizy@rowan.edu

The Office of Diversity, Equity, and Inclusion (DEI) in the Rowan-Virtua School of Osteopathic Medicine (SOM) and Graduate School of Biomedical Sciences (GSBS) supports the mission by preparing culturally proficient physicians and researchers who are equipped to serve diverse communities. The Office of DEI is responsible for collaborative efforts across SOM, GSBS, and Rowan Medicine to recruit and retain diverse talent and foster a holistic teaching and learning environment to produce more diverse physicians to serve New Jersey and the nation. Led by the Inaugural Director of DEI, the SOM and GSBS DEI Committees guide evidence-based goals and actions to impact institutional climate for diverse students, residents, faculty, staff and clinicians to thrive. Collaborative efforts include partnerships with clinical areas on outreach to marginalized communities, pathway programs supporting underrepresented, minoritized high school students, and professional learning to prepare future and current physicians and researchers for culturally-responsive service to eradicate health disparities, racism, and all forms of bias in medicine.

Faculty Center for Excellence in Teaching and Learning

Henry D. James Hall, Room 3092
https://sites.rowan.edu/academic-affairs/facultycenter/

The Faculty Center for Excellence in Teaching and Learning creates valuable and appropriate connections across campus in order to facilitate individuals' growth as engaged university citizens; and serves faculty, pertinent supporting offices, and the institution in pursuit of teaching, scholarship and creative excellence. The Center's three areas of activity are 1) induction and ongoing support of faculty; 2) professional development focused on research-based and culturally responsive teaching practices, acquisition of skills to support diverse learners, and academic career progress; and 3) institutional change relevant to diversity, equity and inclusion in teaching, scholarship and creative activities. Programming is designed to encourage reflective pedagogy and assist in creating an equitable learning environment for all faculty and students. The Center encourages self-directed inquiry through various modes including programs, learning communities, affinity and discussion groups, and conference participation.

Our Goals:

- Promote a high standard of quality teaching and learning encompassing a commitment to diversity, equity and inclusion
- Support junior faculty throughout the tenure and recontracting process
- Support faculty in development of inclusive teaching principles
- Create an inclusive community with equitable opportunities for all faculty
- Represent the interests of teaching and learning at the university
- Build faculty leadership capability
- Maintain currency in the field

Division of Finance

Joseph F. Scully, Jr.
Senior Vice President for Finance and Chief Financial Officer
Bole Hall
856.256.4127
scullyj@rowan.edu

The mission of the Division of Finance is to provide fiscal leadership in supporting the instruction, research, and public service missions of the University by providing reliable financial information; exemplary service and objective advice to both internal and external customers. The Division of Finance oversees a comprehensive financial management system for stewardship of University resources. It also ensures regulatory compliance and the achievement of shared goals and objectives for the University community through teamwork, professional expertise, developing practical procedures and processes, the promotion of efficient systems, maintaining sound financial records, and seeking continuous improvements.

Office of the Bursar

Ann Fulton
University Bursar

Bill Conklin
Assistant Bursar

Savitz Hall, 1st Floor
856.256.4150
bursar@rowan.edu

The Office of the Bursar is responsible for all billing of students and for the collection of payments.

Each term, a statement of expenses will be mailed electronically, and all charges must be paid in full each semester on or before the date stipulated in the statement of expenses given to each student. Students who do not pay their bills may be withdrawn from classes in accordance with the University policy on outstanding financial obligations. Credit may be extended to students engaged in negotiations concerning state scholarships, loans or grants. Questions regarding University expenses should be discussed with the Office of the Bursar.

Check payments should be made payable to Rowan University. Payment may also be made online with Web ACH, Wire Payment, MasterCard, Visa, Discover, or American Express. All students qualify for the Deferred Tuition Payment Plan. Information on the plan is available on the Bursar web site at www.rowan.edu/bursar.

Tuition and fees*, regulated by Rowan University, vary with the nature of the program, location, mode of delivery and are subject to change without notice to individual students. Students can find additional information on tuition and fees at www.rowan.edu/bursar.

*Tuition and fees do not include the cost of textbooks and personal expenses.

Division of Information Resources & Technology (IRT)

Mira Lalovic-Hand
Senior Vice President and CIO
Memorial Hall
856.256.4401
irt@rowan.edu

https://irt.rowan.edu

For help with a technology-related issue, please contact:
IRT Support Center
856.256.4400
support@rowan.edu

The Division of Information Resources & Technology (IRT) provides university-wide support for all information resources governance processes, information technology infrastructure, information security, business applications, data governance, and information management services.

IRT is committed to helping students, faculty and staff with computer, network, telephone/voicemail, username/password and other technology issues. IRT provides that support via phone, email, in-person consultations and on-site visits.

By providing the university with information and technology resources and services that support and enhance academic and administrative programs, IRT promotes student-centeredness, excellence in instructional practice, quality management, and efficiency and integrity of operations.

Card Services Office

Christine Noon
Director of Card Services
Chamberlain Student Center
856.256.4531
noon@rowan.edu

The Card Services Office is responsible for managing all aspects of the official Rowan University identification card and coordination of all activities related to the use of the RowanCard. These responsibilities include managing the University wide card system applications, monitoring the University wide card systems for proper performance, coordinating all distributed responsibilities for University wide card systems, and coordinating integration of all departmental card system applications. The office provides all training related to card systems amongst all campuses. In addition, the office serves as the point of contact for students experiencing problems with their ID card.

Division of Strategic Enrollment Management

Jeff Hand, Ph.D.
Senior Vice President for Strategic Enrollment Management
Savitz Hall, Third Floor
856.256.5185
handj@rowan.edu

Darren Wagner
Vice President for Strategic Enrollment Management & Rowan Global
Enterprise Center, Third Floor
856.256.4728
wagnerda@rowan.edu

The Division of Strategic Enrollment Management supports the University through our commitment to providing quality student experiences – before they even become a PROF. Our data-driven decisions impact all avenues of outreach, communications and resource management. We strategically grow our enrollment with quality assurances in place, which provides our students and faculty the tools necessary to ensure a meaningful college experience.

Through innovative processes and collaborative work initiatives that span divisions, we are able to identify, recruit, and guide students through a successful journey at Rowan. Our university's combination of academics, experiential learning, and creative online course experiences offer our graduates a competitive edge in the ever-changing workforce.

The Division of Strategic Enrollment Management includes the departments of Admissions, Enrollment Management Marketing, Financial Aid, Operations, Office of University Scheduling, Rowan Global Learning & Partnerships, and Strategic Planning & Management.

Financial Aid

Heidi Kovalick
Director
Savitz Hall, 1st Floor
856.256.4250
rowan.edu/financialaid

The financial aid office administers federal, state, institution, and private aid programs to assist students in affording a Rowan University education. Our office also provides one-on-one counseling on a variety of financial wellness topics. Visit our website for comprehensive information and the answers to many of your financial aid questions.

Types of Aid

Financial aid options for students who are pursuing graduate or post-baccalaureate education is limited to federal student loans, private education loans, and scholarships.

Applying for Aid

To apply for financial aid, all students must complete the Free Application for Federal Student Aid (FAFSA) online at www.studentaid.gov. (Rowan's FAFSA code is 002609.) The FAFSA is available on October 1 and must be filed each year that aid is requested. Be aware that summer is the end of the academic year and so if you are beginning your program during the summer sessions you will need to file both the current year FAFSA and the upcoming year's FAFSA at the same time. Applying early allows plenty of time to complete processing before the tuition bill is due.

Students interested in scholarships are encouraged to explore options available through their academic department, and to visit our online search tool located on our website. There are also limited graduate/research assistantships available through the University. Please see the Graduate Studies webpage for more information.

Eligibility

Degree granting programs are academic programs that lead to a degree including bachelor's, master's, and doctoral programs. Students enrolled in degree programs or certain approved certificate programs are eligible to apply for federal financial aid. Please visit our website to view the list of certificate programs that are eligible for federal aid. Private education loans are available to students in all programs, including those certificate programs where federal aid is unavailable.

You must apply each academic year for federal aid and be enrolled at least half-time which is 5 credits for graduate and 6 credits for post-baccalaureate certificates or degree programs. Loans disburse only after the classes begin that bring you to half-time status.

Federal student loans have both annual and aggregate (lifetime) limits. Visit our website to read more about loan limits.

Other financing options include employer tuition reimbursement, private education loans, and the Rowan Deferred Tuition Payment Plan available through our bursar's office. Some private education lenders will make funding available to students who are enrolled less than half-time. Visit our website to read more and to access our search tool for private education lenders.

Satisfactory Academic Progress

In order to receive financial aid, students must meet the minimum Federal standards of Satisfactory Academic Progress (SAP). The standards for Satisfactory Academic Progress for financial aid purposes are different from the academic requirements of the University. In some instances, students experiencing academic difficulty may find that, while they are permitted to remain in school, they may not receive financial aid until they achieve the minimum standards of Satisfactory Academic Progress. SAP standards apply to all terms you attended regardless of whether or not you received financial aid.

You must maintain SAP to remain eligible for financial aid. To ensure financial aid recipients are making Satisfactory Academic Progress (SAP), grades are reviewed at the end of each term to determine eligibility for the next term. All terms of attendance are reviewed, including periods in which the student did not receive financial aid. Each semester, your Rowan University academic record will be reviewed for the following three measures and you will be assigned a SAP Status.

1. **GPA (Quantitative Progress):** Undergraduate students must maintain a cumulative grade point average of at least 2.0 (a C average). Graduate students must maintain a GPA of at least 3.0. Grades of A, B, C, D, and F affect your GPA (including +/- variations). Grades of W, WF, WP, I, U, P, NC or NP, and/or transfer credits do not affect your GPA. All grades are included in the calculation, including the original grade(s) from repeated coursework.

2. **PACE (Completion Rate):** Students must successfully complete a minimum of 67% of all course work (registered credit hours) attempted at Rowan University. Any course with a grade of withdrawal (W), Failure (F), incomplete (I), Not Reported (NR), Not Completed (NC) or audit (AU) is not considered completed course work. Transfer credits are counted as both attempted and completed, thus increasing a student's completion rate.
3. **MAX (Maximum Time Frame):** Students must complete their program within 150% of the credit hours required to complete the degree program, including all transfer credits. Students who have reached their maximum allowable credit hours will be suspended from receiving financial aid. Developmental or remedial hours are excluded from this calculation. The MTF calculation counts all attempted hours including repeated courses, ineligible courses and transfer hours accepted by Rowan University. This also includes hours taken under a previous major and hours for which a student did not receive financial aid.

Visit our website to read more about this policy and options available if you do not maintain SAP, including how to submit an appeal.

Federal Return of Title IV Funds Policy

Federal financial aid is disbursed at the beginning of the semester with the expectation that the student will successfully complete the courses for which the aid was provided. When a student withdraws from all courses for any reason, including medical withdrawals, he/she may no longer be eligible for the full amount of Title IV funds that he/she was originally scheduled to receive.

These federal regulations are separate from the University's refund policy. In some cases, students who withdraw may owe a balance to the University

Treatment of Financial Aid (Title IV) Aid When a Student Withdraws The law specifies how Rowan must determine the amount of Title IV program assistance that you earn if you withdraw from school. The Title IV programs that are covered by this law are Federal Pell Grants, Iraq and Afghanistan Service Grants, TEACH Grants, Direct Loans, Direct PLUS Loans, Federal Supplemental Educational Opportunity Grants (FSEOG), and Federal Perkins Loans.

Though your aid is posted to your account at the start of each period, you earn the funds as you complete the period. If you withdraw during the semester, the amount of Title IV program assistance that you have earned up to that point is determined by a specific formula. If the amount disbursed on your student account is less than the amount that you earned, you may be able to receive those additional funds. If you received more assistance than you earned, the excess funds must be returned to the U.S. Department of Education by Rowan and/or you.

The amount of assistance that you have earned is determined on a pro rata basis. For example, if you completed 30% of the enrollment term, you earn 30% of the assistance you were originally scheduled to receive. Once you have completed more than 60% of the payment period or period of enrollment, you earn all the assistance that you were scheduled to receive for that period.

If you did not receive all of the funds that you earned, you may be due a post-withdrawal disbursement. If your post-withdrawal disbursement includes loan funds, we must get your permission before we can disburse them. You may choose to decline some or all of the loan funds so that you don't incur additional debt. Rowan may automatically use all or a portion of your post-withdrawal disbursement of grant funds for tuition, fees, and room and board charges (as contracted with the school). The school needs your permission to use the post-withdrawal grant disbursement for all other institutional charges. If you did not give your permission, you will be offered the funds. However, it may be in your best interest to allow the school to keep the funds to reduce your account balance owed, if any.

There are some Title IV funds that you were scheduled to receive that cannot be disbursed to you once you withdraw because of other eligibility requirements. For example, if you are a first-time, first-year undergraduate student and you have not completed the first 30 days of your program before you withdraw, you will not receive any Direct Loan funds that you would have received had you remained enrolled past the 30th day.

If you receive (or your school or parent receive on your behalf) excess Title IV program funds that must be returned, your school must return a portion of the excess equal to the lesser of:

1. your institutional charges multiplied by the unearned percentage of your funds, or
2. the entire amount of excess funds.

The school must return this amount even if it didn't keep this amount of your Title IV program funds. If your school is not required to return all of the excess funds, you must return the remaining amount.

For any loan funds that you must return, you (or your parent for a Direct PLUS Loan) repay in accordance with the terms of the promissory note. That is, you make scheduled payments to the holder of the loan over a period of time.

Any amount of unearned grant funds that you must return is called an overpayment. The maximum amount of a grant overpayment that you must repay is half of the grant funds you received or were scheduled to receive. You do not have to repay a grant overpayment if the original amount of the overpayment is $50 or less. You must make arrangements with your school or the Department of Education to return the unearned grant funds.

The requirements for Title IV program funds when you withdraw are separate from any refund policy that your school may have. Therefore, you may still owe funds to the school to cover unpaid institutional charges. Your school may also charge you for any Title IV program funds that the school was required to return. Please review Rowan University's Refund Policy.

You may also want to review the requirements and procedures for officially withdrawing from school.

If you have questions about your Title IV program funds, stop by our office, or call the Federal Student Aid Information Center at 1-800-4-FEDAID (1-800-433-3243). TTY users may call 1-800-730-8913 . Information is also available on Student Aid on the Web at www.studentaid.gov.

Division of University Research

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The Office of the Vice President for Research is responsible for promoting, supporting and administering the research, scholarly and creative activity of Rowan faculty, staff and students. The Division of University Research oversees five departments and one school.

School of Graduate Studies
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The School of Graduate Studies oversees thesis/dissertation final format review for Master's and Doctoral students across all disciplines, reviewing and approving documents prior to notification of the Rowan University Registrar for graduation purposes. It also offers resources to students to aid them in the research and writing phases of their thesis and dissertation work. The Office of Graduate Research Services additionally assists the University Colleges in the hiring of Graduate and Research Assistants (GAs and GRAs).

Office of Sponsored Programs
Jonathan Philippe
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Alternate location:
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The mission of the Office of Sponsored Programs (OSP) is to provide Rowan faculty, staff, and students with information and guidance for the submission of proposals to federal, state, and other sponsors, and to provide effective stewardship of awarded funds.

Office of Research Compliance
Eric Gregory
Director of Research Compliance
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The Office of Research Development is responsible for overseeing the ethical conduct of research and compliance with all applicable federal, state, and institutional laws and regulations.

Office of Proposal Development
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Manager of Research Development
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Alternate location:
Joint Health Sciences Center
Suite A302D
201 Broadway
Camden, NJ 08103

The Office of Research Development (ORD) is responsible for increasing the overall number and quality of competitive, interdisciplinary, and collaborative proposals that support faculty research at Rowan University. OPD achieves this goal by partnering with faculty members to develop project ideas, identify funding sources, facilitate partnerships, form proposal teams, and prepare proposals for submission. In addition, ORD provides timely and targeted trainings to faculty members to develop their grantsmanship skills.

Rowan Innovations
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Alternate location:
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Camden, NJ 08103

Rowan Innovations' role within the Division of Research is to: 1) Grow the South Jersey Technology Park by helping Rowan researchers spin out businesses and attracting external technology companies to locate in SJTP; 2) Develop industry partnerships; 3) Develop non-traditional revenue-generating opportunities for Rowan research centers and 4) Provide support for entrepreneurial faculty/staff to start new business ventures.

Office of Technology Commercialization
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Alternate location:
Joint Health Sciences Center
Suite A302E
201 Broadway
Camden, NJ 08103

The Office of Technology Commercialization (OTC) is responsible for aligning innovations to respond to commercially unmet market needs, receiving invention disclosures, processing patent applications, and executing licensing agreements.

Medical Schools

Rowan University School of Osteopathic Medicine

Thomas A. Cavalieri, DO, MACOI, FACP
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Rowan University School of Osteopathic Medicine (RowanSOM) joined Rowan in July 2013. Established in 1976, RowanSOM is New Jersey's only osteopathic medical school and is committed to excellence in medical education, research, and health care for New Jersey and the nation. RowanSOM includes three nationally recognized institutes for research and treatment: the NJ Institute for Successful Aging (NJISA), the Child Abuse Research Education and Service (CARES) Institute, and the NeuroMusculoskeletal Institute (NMI). In 2019, the Rowan Integrated Special Needs Center (RISN) was established to provide care for people with physical, intellectual, and developmental disabilities. RowanSOM's osteopathic philosophy emphasizes primary health care and community health services, and with our specialty care and centers of excellence, it demonstrates our commitment to innovation and quality. RowanSOM trains clinically skillful, compassionate and culturally competent physicians from diverse backgrounds who are prepared to become leaders in their communities. RowanSOM also continues to expand Graduate Medical Education programs to ensure the successful placement of our graduates. Rowan University School of Osteopathic Medicine is accredited by the Commission on Osteopathic College Accreditation (COCA). In July 2022, we will be welcoming students to our RowanSOM Sewell campus and extension of RowanSOM. In 2021, we received the highest level of accreditation from COCA, and will welcome an additional 72 students to our incoming class. The RowanSOM Sewell Campus will exclusively offer the immersive Problem-based Learning (PBL) Track of the curriculum, where students collaborate with colleagues and dedicated expert faculty to learn a holistic approach to healthcare.

Rowan University Graduate School of Biomedical Sciences

Rowan University Graduate School of Biomedical Sciences
Carl E. Hock, Ph.D.
Senior Associate Dean
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The Rowan University Graduate School of Biomedical Sciences (RowanGSBS) became part of Rowan in July 2013. RowanGSBS offers a Ph.D. in Molecular Cell Biology and Neuroscience; Master of Science in Molecular Cell Biology and Neuroscience; a Master of Science in Anatomical Sciences (non-thesis) and a Certificate in Anatomical Sciences; a Master of Biomedical Sciences (non-thesis) and a Certificate in the Biomedical Sciences; a Master of Science in Histopathology (non-thesis) and a Certificate in Histopathology; and a Master of Science in Molecular Pathology and Immunology. Dual degree programs include Dual D.O./Ph.D., and Accelerated B.S./M.S. dual programs in Biochemistry, Bioinformatics, Biophysics, Molecular and Cellular Biology or Translational Biomedical Science with the Rowan University College of Science & Mathematics and the RowanGSBS Master of Science in Molecular Cell Biology and Neuroscience.

Policies and Procedures

All Rowan University policies are posted on a central web portal.

William G. Rohrer College of Business

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Mission

We empower students to achieve sustainable careers through professionally oriented programs and real-world immersion experiences, integrating relevant faculty research, entrepreneurial thinking, responsible leadership, and community collaboration.

We achieve our mission through a commitment to –

Professionally Oriented Programs and Sustainable Careers: Our students develop the strong disciplinary expertise, poise and professionalism necessary to excel in their first positions as alumni from our programs, as well as the skills to tackle new opportunities as technologies and business models evolve. We feature career-oriented dual-degree options, major-minor pairings, and the ability to combine certificate programs with existing majors.

Entrepreneurial Thinking and Responsible Leadership: We offer entrepreneurially focused curricular and co-curricular programs to help students develop the creativity, initiative, and persistence that characterize the entrepreneurial mindset. As a PRME founding signatory, we are committed to developing students' abilities to generate sustainable value for their employers and society at large.

Relevant Faculty Research: We are aligned with the University's broad definition of research, which includes activities that positively impact the educational experience, the scholarly community, and the economic vitality of the region.

Real-world Immersion and Community Collaboration: We provide multiple real-world immersion experiences for our students that set them apart in a crowded job market. This, combined with our commitment to the economic development of the region, compels us to actively engage with the business and nonprofit communities in our region in ways that benefit all.

Vision

To be a first choice business school for enterprising students and discerning employers, a research hub, and an economic catalyst for the region and beyond.

Accreditation

Rowan University's business programs are accredited by AACSB International (The Association to Advance Collegiate Schools of Business). To achieve this prestigious accreditation, the business programs successfully demonstrated a wide range of quality standards relating to faculty qualification, strategic management of resources, interactions of faculty and students, as well as a commitment to continuous improvement and achievement of learning goals in degree programs.

In addition, the College is just one of a few AACSB International schools in the nation to have the Management Information Systems Program also accredited by ABET, the Accreditation Board for Engineering and Technology, Inc.

Departments

The William G. Rohrer College of Business houses the departments of Accounting and Finance, Management and Entrepreneurship, and Marketing and Business Information Systems. (Not all department offerings are run through the Division of Global Learning & Partnerships.)

Programs Offered

All graduate business programs offered are listed below in order of degree/program type and then in alphabetical order by program name. Details about each program are then listed within the catalog in the same order. For the most up-to-date information regarding mode of delivery options for your program of interest, please visit https://global.rowan.edu/programs.

Please note courses can be taken either face-to-face (F2F) on the Glassboro campus, hybrid (H) at the Rowan College of Burlington County (RCBC) Mount Laurel campus, or online (OL). Format availability and options for graduate programs vary each semester.

MASTER'S DEGREES

Program Name	Format/Location	Program/Major Codes	Avail FT/PT	Total Credits
Master of Business Administration (Glassboro campus)	F2F	MBA-BUS/G501	Both	36
Master of Business Administration (Online)*	100% OL*	MBA-BUS/G501	Part-time	36
Master of Business Administration (RCBC Mount Laurel campus)*	H*	MBA-BUS/G501	Part-time	36
Master of Science in Finance	100% OL*	MS-FIN/G514	Part-time	30

*Regardless of which version of the MBA program students enter into, students are able to enroll in and complete courses offered on campus in Glassboro, hybrid courses offered at RCBC Mount Laurel, and online courses, all depending on interests, offerings, and needs.

MBA Concentration	Concentration Codes
Accounting	C500
Business Analytics	C501
Cannabis Commercialization	C526
Data Analytics	C525
Entrepreneurship	C507
Finance	C504
Human Resource Management	C520
Management	C522
Management Information Systems	C521

Organizational Leadership	C508
Supply Chain and Logistical Systems	C523
Sustainable Business	C519

CERTIFICATES OF ADVANCED GRADUATE STUDY / CAGS (NON-DEGREE)

Please note courses can be taken either face-to-face (F2F) on the Glassboro campus or online (OL). Format availability and options for certificate programs vary each semester.

Program Name	Format/Location	Program/Major Codes	Avail FT/PT	Total Credits
Certificate of Advanced Graduate Study in Accounting	F2F, OL*	CAG-BUSACCT/G551	Part-time	9
Certificate of Advanced Graduate Study in Finance	F2F, OL*	CAG-BUSFIN/G553	Part-time	9
Certificate of Advanced Graduate Study in Management	F2F, OL*	CAG-BUSMANG/G554	Part-time	9
Certificate of Advanced Graduate Study in Management Information Systems (MIS)	F2F, OL*	CAG-BUSMIS/G556	Part-time	9

*Regardless of which version of the CAGS program students enter into, students are able to enroll in and complete courses offered on campus in Glassboro and online. Format availability is dependent on interests, offerings, and needs.

CERTIFICATES OF GRADUATE STUDY / COGS (NON-DEGREE)

Please note courses can be taken either face-to-face (F2F) on the Glassboro campus, hybrid (H) at the Rowan College of Burlington County (RCBC) Mount Laurel campus, or online (OL). Format availability and options for certificate programs vary each semester.

Program Name	Format/Location	Program/Major Codes	Avail FT/PT	Total Credits
Certificate of Graduate Study in Accounting	F2F, OL*	COG-ACCT/G139	Part-time	12
Certificate of Graduate Study in Business	F2F, H, OL*	COG-BUSINESS/G133	Both	9
Certificate of Graduate Study in Business Analytics	OL*	COG-BUSANAL/G558	Part-time	9
Certificate of Graduate Study in Cannabis Commercialization	OL*	COG-CANNCOM/G020	Part-time	9
Certificate of Graduate Study in Corporate Entrepreneurship	OL*	COG-CORPENTR/G933	Part-time	9
Certificate of Graduate Study in Data Analytics	F2F, OL*	COG-DATAN/G557	Part-time	9
Certificate of Graduate Study in Finance	OL*	COGS-FINANCE/G934	Part-time	12
Certificate of Graduate Study in Human Resource Management	OL*	COG-HRM/G155	Part-time	9
Certificate of Graduate Study in Leading Innovative Organizations	OL*	COG-LDGINORG/G932	Part-time	9
Certificate of Graduate Study in Management	F2F, OL*	COG-MGMT/G156	Part-time	9
Certificate of Graduate Study in Management Information Systems/MIS	F2F, OL*	COG-MIS/G131	Part-time	10.5
Certificate of Graduate Study in Organizational Leadership	OL*	COG-ORGLDRSP/G154	Part-time	9
Certificate of Graduate Study in Supply Chain and Logistical Systems	F2F, OL*	COG-SUPLOG/G021	Part-time	9

Certificate of Graduate Study in Technology and Innovation	OL*	COG-TECHINV/G931	Part-time	9

*Regardless of which version of the COGS program students enter into, students are able to enroll in and complete courses offered on campus in Glassboro, hybrid courses offered at RCBC Mount Laurel, and online courses, all depending on interests, offerings, and needs.

Academic Program Policy Categories

For the purposes of both the Minimum Satisfactory Academic Progress policy and the Minimum Graduation Requirements policy, post-baccalaureate/graduate academic programs at Rowan University fall into one of three major categories which are identified by their grade requirements as outlined below. (See individual program descriptions for academic categories.)

Category 1: To maintain Minimum Satisfactory Academic Progress in and to successfully graduate from a Category 1 program students must:

- Earn no more than two total "B-" grades
- Earn no grades lower than a "B-"
- Earn an official cumulative GPA (according to matriculation level) of at least 3.000 on Rowan's 4.000 scale

Category 2: To maintain Minimum Satisfactory Academic Progress in and to successfully graduate from a Category 2 program students must:

- Earn no grades lower than a "B-"
- Earn an official cumulative GPA (according to matriculation level) of at least 3.000 on Rowan's 4.000 scale

Category 3: To maintain Minimum Satisfactory Academic Progress in and to successfully graduate from a Category 3 program students must:

- Earn no more than two total C grades of any combination of "C+" or "C." (C- grades are not acceptable.)
- Earn no grades lower than a "C"
- Earn an official cumulative GPA (according to matriculation level) of at least 3.000 on Rowan's 4.000 scale

Policy Prior to Fall 2013 Matriculation

The academic review and minimum graduation requirements review policies will be applied to Rowan graduate and post-baccalaureate students who matriculate beginning Fall 2013 or later; however, current students (those matriculated and active before Fall 2013) will be grandfathered under the prior policy/practice, whose grade and GPA requirements are the same as Academic Review Category 3.

Master's Degrees

Master of Business Administration (MBA)

The Master of Business Administration (MBA) program at Rowan University provides contemporary graduate business education to professionals from diverse fields and academic backgrounds. The program prepares students as team leaders and team players with effective interpersonal, oral, and written communication and group process skills. The MBA curriculum emphasizes critical thinking, quantitative analysis and computing applications, and the technological and international nature of business.

The William G. Rohrer College of Business MBA program offers small class sizes with an average student/faculty ratio of 18 to 1. The program attracts graduates from business, sciences, engineering, and other programs, whose careers are leading them to positions of increasing responsibility in business, government, and non-profit organizations. Graduates are prepared to assume leadership roles across sectors, industries, and fields.

The MBA program consists of 12 graduate classes with nine required and three elective courses. Prospective students who do not have the required foundation courses may choose to apply directly to the MBA program and complete their foundation courses while enrolled as a graduate student.

For students enrolled in the face-to-face MBA, the three elective courses allow the individual student to tailor the academic program to meet his or her specific career development needs by pursuing an area of concentration. For students enrolled in the fully online program or the hybrid program at Rowan College of Burlington County (RCBC), the three elective courses will be offered based on availability (more information is provided below). Regardless of which version of the program students enter into, students are able to enroll in and complete courses offered on campus in Glassboro, hybrid courses offered at RCBC, and online courses, all depending on interests, offerings, and needs.

Rowan's MBA program is designed to accommodate both full-time students and full-time employees. The program is personal, pragmatic, and progressive. Face-to-face classes are conveniently scheduled in the evening to accommodate demanding work schedules. Rowan's reputation makes the MBA a wise investment. Rowan's MBA tuition is among the lowest for AACSB accredited programs in the Philadelphia region.

Foundation Courses

Eligible applicants must have successfully completed the following undergraduate foundation courses at an accredited institution. (Foundation courses FC-6 and FC-7 must be completed at a 4-year institution to fulfill foundation course requirements. FC-1 through FC-5 may be taken at a junior/community college.) During the admissions process, the MBA academic advisor will determine foundation course equivalencies and which unfinished undergraduate foundation courses can be scheduled concurrently with graduate enrollment. If applicable, official notification of any unfinished foundation courses will be included in the applicant's official admission decision letter from Rowan University.

- FC-1. Calculus Techniques & Applications (3 s.h.)
- FC-2. Statistics I (3 s.h.)
- FC-3. Foundations of Accounting (3 s.h.) or Principles of Accounting I & II
- FC-4. Principles of Economics: A Survey (3 s.h.) or Microeconomics & Macroeconomics
- FC-5. Principles of Marketing (3 s.h.)
- FC-6. Principles of Finance (3 s.h.)
- FC-7. Operations Management (3 s.h.)

MBA CONCENTRATIONS

The MBA program offers the degree with the following concentration options. All students admitted Fall 2021 or later must select at least one concentration. Students have the option to complete two areas of concentration, or one area of concentration and three general electives.

- General MBA - Select electives tailored to interest
- Accounting
- Business Analytics
- Cannabis Commercialization
- Data Analytics
- Entrepreneurship
- Finance
- Human Resource Management
- Management
- Management Information Systems (MIS)
- Organizational Leadership
- Supply Chain & Logistical Systems
- Sustainable Business

Program Requirements

Required Courses 18 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
ACC 03500	Financial and Managerial Accounting	3
FIN 04500	Financial Decision Making	3
MGT 06515	Employee Engagement and Performance	1.5
MGT 06567	Responsible Leadership Aligning the Interests of Stakeholders, Profit and Planet	1.5
MGT 06629	Managing Organizational Strategy	3
MGT 07550	Operations Analytics	3
MIS 02501	Information Systems for Managers	1.5
MKT 09511	Marketing Management Fundamentals	1.5

Concentration Courses 18 s.h.

Choose two of the following concentrations:

General MBA 9 s.h.

Choose three (3) courses from those listed below for a total of nine (9) semester hours.

Not all electives will be offered online each term. There may be elective options not included below.

Accounting 9 s.h.

Choose 9 s.h. from the following options.

Course #	Course Title	S.H.
ACC 03502	Advanced Managerial Accounting	3
ACC 03507	Government & Not-for-Profit Accounting	3
ACC 03509	Intermediate Financial Accounting	3
ACC 03510	Financial Statement Analysis	3
ACC 03511	Introduction to Federal Taxation	3
ACC 03512	Advanced AIS & Business Process Controls	3
ACC 03513	CPA Review	3
ACC 03514	Accounting Legal Liability & Professional Responsibility	3
ACC 03515	Forensic Accounting	3

Business Analytics 9 s.h.

Choose 9 s.h. from the following options.

Course #	Course Title	S.H.
MGT 06603	Process Analytics	3
MGT 07500	Prescriptive Analytics	3
MGT 07510	Quality Analytics	3
MGT 07600	Predictive Analytics	3

Cannabis Commercialization 9 s.h.

Choose two (2) from the following options. 6 s.h.

Course #	Course Title	S.H.
ENT 06520	Evolution of the Cannabis Industry	3
ENT 06521	Business Model Innovation in Cannabis	3

and

Choose one (1) from the following options. 3 s.h.

Course #	Course Title	S.H.
CANN 03501	Cannabis Legislation, Regulations, and Policy Evaluation	3
CANN 03502	Marijuana Legalization and Decriminalization in Work, Leisure, and Settings	3
CANN 03503	Cannabis Research, Program Evaluation, and Policy Development	3
CHEM 09530	Advanced Chemical Analysis of Cannabinoids	3
CJ 09529	Community Justice	3
CJ 09532	Race, Ethnicity, Class and Justice	3
DA 02510	Visual Analytics	3
DI 68501	Intro to Diversity and Inclusion	3
ENT 06505	Entrepreneurship & Innovation	3
ENT 06601	Social Entrepreneurship and Impact Leveling for Change	3
FIN 04512	Capital Budgeting	3

HIST 05519	Political and Social Movements in the U.S.	3
MGT 06530	Sustainable Commerce	3
MGT 06531	Sustainability Assessment	3
MGT 06601	Strategic Planning for Operating Managers	3
MGT 06532	Topics in Sustainability Innovation and Problem Solving	3
MGT 07600	Predictive Analytics	3
MKT 09575	Introduction to Logistics and Supply Chain Management	3

and

Data Analytics 9 s.h.

Choose two (2) from the following options. 6 s.h.

Course #	Course Title	S.H.
MIS 02538	Database Design	3
MIS 02540	Data Warehousing & Business Intelligence	3

and

Choose one (1) from the following options. 3 s.h.

Course #	Course Title	S.H.
CS 02505	Data Mining I	3
DA 02510	Visual Analytics	3
CS 02625	Data Quality/Web Text Mining	3
	Additional courses may be taken to fulfill the elective requirement with approval of the MBA Program Director or Graduate Academic Advisor.	3

Entrepreneurship 9 s.h.

Choose 9 s.h. from the following options.

Course #	Course Title	S.H.
ENT 06504	Strategic Project-Based Experience	3
ENT 06505	Entrepreneurship and Innovation	3
ENT 06506	Corporate Entrepreneurship & New Venture Deployment	3
ENT 06599	Special Topics in Entrepreneurship	3
*MGT 06520	Global Leadership and Organizational Culture	3
*MGT 06601	Strategic Planning	3
*MGT 06603	Process Analytics	3
*MGT 06605	Strategic Human Resources Management	3
*MGT 07600	Predictive Analytics	3
*MIS 02515	Electronic Commerce	3

*Only one (1) course will count towards the Entrepreneurship concentration and requires the advanced approval from the MBA Program Director or Graduate Academic Advisor.

Finance 9 s.h.

Choose 9 s.h. from the following options

Course #	Course Title	S.H.
BUS 01600	Special Topics in Business Administration (finance topic)	3
FIN 04505	Advanced Financial Planning	3
FIN 04510	Quantitative Methods in Finance	3
FIN 04512	Capital Budgeting	3
FIN 04516	Issues in Finance	3
FIN 04518	Derivative Securities & Financial Risk Management	3
FIN 04520	Financial Modeling	3
FIN 04530	Multinational Financial Management	3
FIN 04540	Financial Institutions Management	3
FIN 04560	Fixed Income Securities	3
FIN 04600	Investment Analysis & Portfolio Management	3

Human Resource Management 9 s.h.

Choose 9 s.h. from the following options.

Course #	Course Title	S.H.
HRM 06605	Strategic Human Resource Management	3
HRM 06677	People Analytics	3
HRM 06688	Talent Leadership	3

Management 9 s.h.

Choose 9 s.h. from the following options.

Course #	Course Title	S.H.
BUS 01600	Special Topics in Business Administration (management topic)	3
ENT 06505	Entrepreneurship & Innovation	3
ENT 06599	Special Topics in Entrepreneurship	3
HRM 06605	Strategic Human Resource Management	3
MGT 06501	Advanced Operations Management and Strategy	3
MGT 06503	Organization Development	3
MGT 06520	Global Leadership & Organization Culture	3
MGT 06601	Strategic Planning for Operating Managers	3
MGT 06603	Business Processes & Improvement	3
MGT 07600	Predictive Analytics	3

Management Information Systems 9 s.h.

Choose 9 s.h. from the following options.

Course #	Course Title	S.H.
MIS 02515	Electronic Commerce	3
MIS 02522	Systems Analysis & Design	3
MIS 02525	Project Management	3
MIS 02538	Database Design	3
MIS 02599	Special Topics in MIS	3

Organizational Leadership 9 s.h.

Course #	Course Title	S.H.
MGT 06520	Global Leadership and Organizational Culture	3
MGT 06521	Leadership Theory and Practice	3
MGT 06555	Personal Leadership	3

Supply Chain & Logistical Systems 9 s.h.

Course #	Course Title	S.H.
MKT 09575	Introduction to Logistics & Supply Chain Management	3
MKT 09605	Supply Chain Strategy	3
SCL 01620	Supply Chain Analytics	3

Sustainable Business 9 s.h.

Choose two (2) from the following options. 6 s.h.

Course #	Course Title	S.H.
MGT 06530	Sustainable Business	3
MGT 06531	Sustainability Assessment	3
MGT 06532	Topics in Sustainability Innovation and Problem Solving	3

and

Choose one (1) from the following options. 3 s.h.

Course #	Course Title	S.H.
ENT 06505	Entrepreneurship and Innovation	3
ENT 06506	Corporate Entrepreneurship	3
ENT 06601	Social Entrepreneurship and Impact Investment for Change	3
ACC 03507	Government & Not-for-Profit Accounting	3

Total Required Credits for the Program 36 s.h.

Foundation Courses

See "Foundation Courses" above.

Graduation/Exit, Benchmark & Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The MBA is a Category 3 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Director Contact Information
Jennifer Maden
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Master of Science in Finance

The Rowan University Online Master of Science in Finance is a rigorous program that combines quantitative techniques with practical experience. This program is designed to prepare students for financial analyst and financial planner positions in corporations and financial institutions. Rowan's M.S. in Finance program will help prepare students for the Chartered Financial Analyst (CFA) and Certified Financial Planner (CFP) exams, the premier certifications in the finance field.

Program Requirements

The Master of Science in Finance requires a total of 30 semester hours of graduate coursework for program completion.

Required Courses 30 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
ACC 03510	Financial Statement Analysis	3
FIN 04500	Financial Decision Making	3
FIN 04505	Advanced Financial Planning	3
FIN 04511	Quantitative Methods in Finance	3
FIN 04518	Derivative Securities & Financial Risk Management	3
FIN 04520	Financial Modeling	3
FIN 04530	Multinational Financial Management	3
FIN 04540	Financial Institutions Management	3
FIN 04560	Fixed Income Securities	3
FIN 04600	Investment Analysis and Portfolio Management	3

Total Required Credits for the Program 30 s.h.

Foundation Courses

Eligible applicants must have successfully completed the following undergraduate foundation courses at an accredited institution with a minimum grade of "C":

- FC-1. Foundations of Accounting OR Principles of Accounting I & II
- FC-2. Principles of Economics: A Survey OR Macroeconomics and Microeconomics
- FC-3. Statistics I
- FC-4. Calculus I OR Calculus Techniques and Applications
- FC-5. Principles of Finance

Graduation/Exit, Benchmark, and Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The Master of Science in Finance is a Category 3 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
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Certificates of Advanced Graduate Study (Non-degree)

Certificate of Advanced Graduate Study (Post-MBA CAGS) Overview

Completion of a Certificate of Advanced Graduate Study (CAGS) will afford Rowan MBA alumni as well as MBA graduates of other AACSB accredited universities the opportunity to complete an area of concentration or complete a new concentration. The Post MBA CAGS provides MBA graduates an opportunity to prepare themselves for opportunities in a rapidly changing workplace by enrolling in concentrations related to their current or expected career paths.

Concentrations

The Post-MBA CAGS program offers the following concentration options: Accounting, Finance, Management, and Management Information Systems (MIS).

Certificate of Advanced Graduate Study in Accounting (CAGS)

See "Certificate of Advanced Graduate Study (Post-MBA CAGS) Overview."

Program Requirements

Required Courses 9 s.h.

(s.h.: semester hours/credit hours)

Choose three (3) graduate business courses beginning with ACC03500 such as the following options:

Course #	Course Title	S.H.
ACC 03502	Advanced Managerial Accounting	3
ACC 03507	Government & Not-for-Profit Accounting	3
ACC 03509	Intermediate Financial Accounting	3
ACC 03510	Financial Statement Analysis	3
ACC 03511	Introduction to Federal Taxation	3
ACC 03515	Forensic Accounting and Fraud Examination	3
FIN 04512	Capital Budgeting	3
Total Required Credits for the Program		9 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark & Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The CAGS in Accounting is a Category 3 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Director Contact Information
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Certificate of Advanced Graduate Study in Finance (CAGS)

See "Certificate of Advanced Graduate Study (Post-MBA CAGS) Overview."

Program Requirements

Required Courses 9 s.h.

(s.h.: semester hours/credit hours)

Choose three (3) graduate business courses beginning with FIN04500 such as the following options:

Course #	Course Title	S.H.
BUS 01600	Special Topics in Business Administration (Finance topic)	3
FIN 04512	Capital Budgeting	3

FIN 04516	Issues in Finance	3
FIN 04518	Derivative Securities and Financial Risk Management	3
FIN 04600	Investment/Portfolio Analysis	3
Total Required Credits for the Program		9 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark & Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The CAGS in Finance is a Category 3 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator Contact Information
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Certificate of Advanced Graduate Study in Management (CAGS)

See "Certificate of Advanced Graduate Study (Post-MBA CAGS) Overview."

Program Requirements

Required Courses 9 s.h.

(s.h.: semester hours/credit hours)

Choose three (3) graduate business courses beginning with ENT06500, HRM06500, MGT06500 such as the following options:

Course #	Course Title	S.H.
BUS 01600	Special Topics in Business Administration (management topic)	3
ENT 06505	Entrepreneurship & Innovation	3
ENT 06506	Corporate Entrepreneurship & New Venture Development	3
ENT 06599	Special Topics in Entrepreneurship	3
HRM 06605	Strategic Human Resource Management	3
MGT 06501	Advanced Operations Management & Strategy	3
MGT 06503	Organization Development	3
MGT 06520	Global Leadership & Organization Culture	3
MGT 06601	Strategic Planning for Operating Managers	3
MGT 06603	Business Processes & Improvement	3
MGT 07600	Business Forecasting	3
	Graduate level special topics in ENT, HRM, MGT courses are options.	3
Total Required Credits for the Program		9 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark & Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The CAGS in Management is a Category 3 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Director Contact Information
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Certificate of Advanced Graduate Study in Management Information Systems/MIS (CAGS)

See "Certificate of Advanced Graduate Study (Post-MBA CAGS) Overview."

Program Requirements

Required Courses 9 s.h.

(s.h.: semester hours/credit hours)

Choose three (3) graduate business courses beginning with MIS 02500 such as the following options:

Course #	Course Title	S.H.
MIS 02515	Electronic Commerce	3
MIS 02522	Systems Analysis & Design	3
MIS 02525	Project Management	3
MIS 02538	Database Design	3
MIS 02599	Special Topics in MIS	3
	Graduate level special topics in MIS courses are options.	3

Total Required Credits for the Program 9 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark & Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The CAGS in Management Information Systems/MIS is a Category 3 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Director Contact Information
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Certificates of Graduate Study (Non-degree)

Certificate of Graduate Study in Accounting (COGS)

The Accounting Certificate of Graduate Study (COGS) is designed so that students can expand their knowledge in specialized accounting subjects as well as obtain additional courses needed to reach the 150 credit requirement to be licensed as a CPA. The purpose of the COGS in Accounting can also serve those that wish to gain business expertise for career purposes, as well as an opportunity for aspirational applicants to take several classes before they apply to the MBA Program.

Program Requirements

- Accounting Certificate of Graduate Study at Rowan University requires the completion of 12 graduate semester hours (s.h.) made up of 4 courses.
- Students who have not earned a bachelor's in accounting must take Financial and Managerial Accounting (ACC 03500), along with three (3) electives.

Required Courses 12 s.h.

(s.h.: semester hours/credit hours)

Choose four (4) from the following options.

Course #	Course Title	S.H.
ACC 03502	Advanced Managerial Accounting	3
ACC 03507	Government & Not-for-Profit Accounting	3
ACC 03509	Intermediate Financial Accounting	3
ACC 03510	Financial Statement Analysis	3
ACC 03511	Introduction to Federal Taxation	3
ACC 03512	Advanced AIS & Business Process Controls	3
ACC 03513	CPA Review	3
ACC 03514	Accounting Legal Liability & Professional Responsibility	3
ACC 03515	Forensic Accounting & Fraud Examination	3
TBD	Graduate level special topics in Accounting courses are options.	3

Total Required Credits for the Program 12 s.h.

Foundation Courses

Foundations of Accounting (3.0 s.h.) or Principles of Accounting I and Principles of Accounting II

Graduation/Exit, Benchmark, and Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The COGS in Accounting is a Category 3 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Director Contact Information
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Certificate of Graduate Study in Business (COGS)

The Business COGS provides graduate course exposure to students who are ultimately interested in pursuing the MBA degree. There are many potential graduate students who are considering the MBA degree. The purpose of the COGS in Business is to serve as a mini-MBA for those that wish to gain business expertise for career purposes, as well as an opportunity for aspirational applicants to take several classes before they apply to the MBA Program.

Program Requirements

Required Courses 9 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
ACC 03500	Financial and Managerial Accounting	3
MGT 06567	Responsible Leadership: Aligning the Interests of Stakeholders, Profit, and Planet	1.5
MGT 06515	Employee Engagement and Performance	1.5
MIS 02501	Issues in Management Information Systems	1.5
MKT 09511	Marketing Management Fundamentals	1.5

Total Required Credits for the Program 9 s.h.

Foundation Courses

Eligible applicants must have successfully completed the following undergraduate foundation courses at a regionally accredited institution. During the admission process, the MBA academic advisor will determine foundation course equivalencies. If applicable, official notification of any unfinished foundation courses will be included in the applicant's official decision letter from Rowan University.

- FC-1. Foundations of Accounting or Principles of Accounting I and II
- FC-2. Principles of Marketing

Students admitted without having completed these foundation courses may complete them while enrolled in the COGS in Business program. The foundation courses must be completed before the corresponding course for which the foundation course is a prerequisite and do not count toward the 9 required semester hours for the program.

Graduation/Exit, Benchmark, and Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The COGS in Business is a Category 3 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Director Contact Information
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Certificate of Graduate Study in Business Analytics (COGS)

Business Analytics is the utilization of data to assist in solving business problems. Over time, decisions made with the help of analytics outperform decisions made solely on the basis of hunches or intuitions. Thanks to technological advances, all businesses now have the capability of applying business analytics, yet many lack the necessary expertise. While this COGS can be pursued independently as a standalone credential, it can also serve as a complementary offering to the MBA program.

Program Requirements

Required Courses 9 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
MGT 06603	Process Analytics	3
MGT 07500	Prescriptive Analytics	3
MGT 07510	Quality Analytics	3
MGT 07600	Predictive Analytics	3

Total Required Credits for the Program 9 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The COGS in Business Analytics is a Category 3 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Director Contact Information
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Certificate of Graduate Study in Cannabis Commercialization (COGS)

The rapidly evolving cannabis industry is anticipated to become a multi-billion dollar economic driver across the USA – and beyond. Career opportunities related to cannabis are vast, and cross-over talent is in high demand. Plant-touching verticals such as cultivation, extraction, manufacturing and/or retail need experts from other industries to adapt, extend, and expand best practices into the highly regulated cannabis market. There is strong and growing demand for ancillary businesses complementing and serving the cannabis industry, with potential career pathways in far ranging categories such as accessory manufacturers, tech start-ups, as well as services and solutions in accounting and tax, finance and banking, data analysis, marketing and branding, supply chain, and healthcare. Whether you are drawn to Plant Touching or Ancillary Cannabis Business career pathways – or want to explore options in both categories – you can tailor the Cannabis Commercialization COGS to support your career goals.

Program Requirements

Required Courses 6 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
ENT 06520	The Evolution of the Cannabis Industry	3
ENT 06521	Business Model Innovation in Cannabis	3

Elective Courses 3 s.h.

Choose 3 s.h.

Course #	Course Title	S.H.
CANN 03501	Cannabis Legislation, Regulation, and Policy	3
CANN 03502	Marijuana Legalization and Decriminalization in Work, Leisure, and Setting	3
CANN 03503	Cannabis Research, Program Evaluation and Policy Development	3
CHEM 09530	Advanced Chemical Analysis of Cannabinoids	3

CJ 09529	Community Justice	3
CJ 09532	Race, Ethnicity, Class and Justice	3
DA 02510	Visual Analytics	3
DI 68501	Introduction to Diversity and Inclusion	3
ENT 06505	Entrepreneurship & Innovation	3
ENT 06601	Social Entrepreneurship and Impact Investing for Change	3
FIN 04512	Capital Budgeting	3
HIST 05519	Political and Social Movements in the US	3
MGT 06530	Sustainable Commerce	3
MGT 06531	Sustainability Assessment	3
MGT 06532	Topics in Sustainability Innovation and Problem Solving	3
MGT 06601	Strategic Planning for Operating Managers	3
MGT 07600	Predictive Analytics	3
MKT 09575	Introduction to Logistics and Supply Chain Management	3
Total Required Credits for the Program		9 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The COGS in Cannabis Commercialization is a Category 3 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Director Contact Information
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Certificate of Graduate Study in Corporate Entrepreneurship (COGS)

The Corporate Entrepreneurship Certificate of Graduate Study (COGS) provides students with an overview of the potential for innovation and entrepreneurial opportunities of new ventures within a corporate environment. It prepares the entrepreneurs for strategic planning, and acquaints students with advanced statistical forecasting techniques.

The Corporate Entrepreneurship COGS is a valuable stand-alone credential for those seeking to refresh skills in their current roles. The Corporate Entrepreneurship COGS program also serves as a micro-credential on the way toward earning a degree that allows students to sample content before being formally admitted into Rowan's Master of Business Administration (MBA) with an Entrepreneurship Area of Concentration.

Program Requirements

The Corporate Entrepreneurship Certificate of Graduate Study at Rowan University requires the completion of nine (9) graduate semester hours (s.h.) made up of three (3) courses.

Required Courses 9 s.h.

(s.h.: semester hours/credit hours)

Choose three (3) from the following options.

Course #	Course Title	S.H.
ENT 06505	Entrepreneurship and Innovation	3
ENT 06506	Corporate Entrepreneurship	3
MGT 06601	Strategic Planning	3
MGT 07600	Predictive Analytics	3
Total Required Credits for the Program		9 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The COGS in Corporate Entrepreneurship is a Category 3 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Director Contact Information
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Certificate of Graduate Study in Data Analytics (COGS)

The Certificate of Graduate Study (COGS) in Data Analytics is designed for individuals who already have earned a Bachelor's degree and are looking to expand their knowledge and opportunities in the area of data analytics. There is an increased need for employees who can use programs, data, and computational tools to explore and discover relevant insights in big data as well as apply critical thinking skills to data analysis for purposes of improving organizational efficiency and solving business problems.

Program Requirements

Required Courses 6 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S. H.
MIS 02358	Database Design	3
MIS 02540	Data Warehousing & Business Intelligence	3

Elective Courses 3 s.h.

Choose 3 s.h.

Course #	Course Title	S.H.
CS 02505	Data Mining I	3
DA 02510	Visual Analytics	3
CS 02625	Data Quality/Web Text Mining	3
	Additional courses may be taken to fulfill the elective requirement with approval of the MBA Program Director or Graduate Academic Advisor	3

Total Required Credits 9 s.h.

Foundation Courses

Please contact program coordinator for additional details.

Graduation/Exit, Benchmark, and Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The COGS in Data Analytics is a Category 3 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
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Certificate of Graduate Study in Finance (COGS)

The Finance Certificate of Graduate Study (COGS) offers students the opportunity to pursue quantitative and analytical concepts and tools that are valuable in corporate, non-profit, and personal finance settings.

The Finance COGS is a valuable stand-alone credential for those seeking to refresh skills in their current finance-related roles. The Finance COGS program also serves as a micro-credential on the way toward earning a degree that allows students to sample content before being formally admitted into Rowan's Master of Finance (MSF) or Master of Business Administration (MBA) with a Finance Area of Concentration.

Program Requirements

The Finance Certificate of Graduate Study at Rowan University requires the completion of 12 graduate semester hours (s.h.) made up of four (4) courses.

Required Courses 12 s.h.

(s.h.: semester hours/credit hours)

Choose four (4) from the following options.

Course #	Course Title	S.H.
ACC 03510	Financial Statement Analysis	3
FIN 04500	Financial Decision Making	3
FIN 04505	Advanced Financial Planning	3
FIN 04510	Independent Study - Finance	3
FIN 04511	Quantitative Methods in Finance	3
FIN 04512	Capital Budgeting	3
FIN 04516	Issues in Finance	3
FIN 04518	Derivative Securities & Financial Risk Management	3
FIN 04520	Financial Modeling	3
FIN 04530	Multinational Finance Management	3
FIN 04540	Financial Institutions Management	3
FIN 04560	Fixed Income Securities	3
FIN 04600	Investment Analysis and Portfolio Management	3

Total Required Credits for the Program 12 s.h.

Foundation Courses

- Calculus: Techniques & Applications
- Foundations of Accounting **or** Principles of Accounting I and Principles of Accounting II
- Principles of Economics: A Survey or Macroeconomics and Microeconomics
- Principles of Finance
- Statistics I

Graduation/Exit, Benchmark, and Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The COGS in Finance is a Category 3 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Director Contact Information
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Certificate of Graduate Study in Human Resource Management (COGS)

The Certificate of Graduate Study in Human Resource Management will expand your understanding of how human capital management enhances organizational effectiveness. This program is aimed at practicing human resource managers who want to enhance their careers, professionals who wish to enter the field of human resource management, and line managers who want to maximize the contributions of the employees who report to them. The program is structured around solutions to common human resource problems such as voluntary turnover, counterproductive employee behaviors, and lack of inclusivity in the workplace..

Program Requirements

Required Courses 9 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
HRM 06605	Strategic Human Resource Management	3
HRM 06677	People Analytics	3
HRM 06688	Talent Leadership	3

Total Required Credits for the Program 9 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The COGS in Business Analytics is a Category 3 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Director Contact Information
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Certificate of Graduate Study in Leading Innovative Organizations (COGS)

The Leading Innovative Organizations Certificate of Graduate Study (COGS) helps students apply an alternative way of thinking to assist in solving difficult issues for government, business, and the non-profit sectors. The Leading Innovative Organizations COGS also focuses on the transformation of Human Resource Management, diverse and complex business environments, processes that enhance individual and organizational performance, and advanced topics in entrepreneurship.

The Leading Innovative Organizations COGS is a valuable stand-alone credential for those seeking to refresh skills in their current roles. The Leading Innovative Organizations COGS program also serves as a micro-credential on the way toward earning a degree that allows students to sample content before being formally admitted into Rowan's Master of Business Administration (MBA) with an Entrepreneurship Area of Concentration.

Program Requirements

The Leading Innovative Organizations Certificate of Graduate Study at Rowan University requires the completion of nine (9) graduate semester hours (s.h.) made up of three (3) courses.

Required Courses 9 s.h.

(s.h.: semester hours/credit hours)

Choose three (3) from the following options.

Course #	Course Title	S.H.
ENT 06505	Entrepreneurship and Innovation	3
ENT 06599	Special Topics in Entrepreneurship	3
HRM 06605	Strategic Human Resource Management	3
MGT 06520	Global Leadership and Organization Culture	3

Total Required Credits for the Program 9 s.h.

Foundation Courses
None

Graduation/Exit, Benchmark, and Thesis Requirements
None

Minimum Required Grades and Cumulative GPA
The COGS in Leading Innovative Organizations is a Category 3 program.
For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Director Contact Information
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Certificate of Graduate Study in Management (COGS)

The Certificate of Graduate Study in Management prepares students to succeed as managers. Demand for managers is strong and salaries of managers are high. Strategic Planning for Operating Managers is a required course because planning is the fundamental management function. Electives can be chosen to augment the skill sets of each student in areas such as corporate entrepreneurship, human resource management, leadership, and sustainability.

Program Requirements

Required Courses 3 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
MGT 06601	Strategic Planning for Operating Managers	3

Elective Courses 6 s.h.

Choose 6 s.h.

Course #	Course Title	S.H.
ENT 06605	Entrepreneurship and Innovation	3
or ENT 06506	Corporate Entrepreneurship and New Venture Development	3
MGT 06520	Global Leadership and Organizational Culture	3
or MGT 06521	Leadership Theory and Practice	3
or MGT 06555	Personal Leadership	3
MGT 06530	Sustainable Commerce	3
or MGT 06532	Topics in Sustainability, Innovation, and Problem Solving	3
HRM 06605	Strategic Human Resource Management	3
MGT 01510	Professional, Legal, and Managerial Responsibilities	3
MGT 06502	International Business and Society	3
MGT 06599	Special Topics in Management	3

Total Required Credits for the Program 9 s.h.

Foundation Courses
None

Graduation/Exit, Benchmark, and Thesis Requirements
None

Minimum Required Grades and Cumulative GPA
The COGS in Management is a Category 3 program.
For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Director Contact Information
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Certificate of Graduate Study in Management Information Systems/MIS (COGS)

The Certificate of Graduate Study in Management Information Systems/MIS (COGS) will enhance a student's preparedness to assume jobs in a world of rapidly changing technology by preparing them to develop business solutions through the use of information and technology resources. Students will be experienced in dealing with technological issues, understand the role of humans in developing technology-based solutions, and have the ability to manage technology-related projects. The purpose of the COGS in MIS is to serve those that wish to gain business expertise for career purposes, as well as an opportunity for aspirational applicants to take several classes before they apply to the MBA Program.

Program Requirements

Required Courses 1.5 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
MIS 02501	Information Systems for Managers	1.5

Elective Courses 9 s.h.

Choose three (3) from the following options.

Course #	Course Title	S.H.
MIS 02515	Electronic Commerce	3
MIS 02522	Systems Analysis & Design	3
MIS 02525	Project Management	3
MIS 02599	Special Topics in MIS	3
MIS 02538	Database Design	3
TBD	Graduate level special topics in MIS courses are options.	3

Total Required Credits for the Program 10.5 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The COGS in Management Information Systems/MIS is a Category 3 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Director Contact Information
Jennifer Maden
Assistant Dean and Director of Graduate Studies
Business Hall
856.256.5220
maden@rowan.edu

Certificate of Graduate Study in Organizational Leadership (COGS)

The COGS in Organizational Leadership will explore theories and strategies, such as working with other leaders in a multinational world, influencing and empowering teams with diverse backgrounds, changing organization culture, ethics in leadership, and how to achieve high-quality results in a leadership position. These skills are vital for any business professional pursuing a leadership position, or hoping to take on greater responsibility as part of their career.

Program Requirements

Required Courses 9 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
MGT 06520	Global Leadership and Organizational Culture	3
MGT 07500	Prescriptive Analytics	3
MGT 06521	Leadership Theory and Practice	3
MGT 06555	Personal Leadership	3

Total Required Credits for the Program 9 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The COGS in Organizational Leadership is a Category 3 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Director Contact Information
Jennifer Maden
Assistant Dean and Director of Graduate Studies
Business Hall
856.256.5220
maden@rowan.edu

Certificate of Graduate Study in Supply Chain and Logistical Systems (COGS)

There is great demand from industry for supply chain and logistics talent – both for immediate jobs, and also for career paths and opportunities that offer longevity, growth, and lucrative salaries. Demand across industries and sectors for professionals with supply chain and logistics talent has been growing over the past decade, but demand for supply chain and logistics has surged as the world collectively experienced the Covid-19 pandemic – during which supply chain problems became a common household conversation. The growing field of supply chain and analytics touches nearly every industry and sector, crosses corporate and government and non-profit realms, and supports many types of units within organizations.

Program Requirements

Required Courses		9 s.h.
(s.h.: semester hours/credit hours)		
Course #	**Course Title**	**S.H.**
MKT 09575	Introduction to Logistics and Supply Chain Management	3
MKT 09605	Supply Chain Strategy	3
SCL 01620	Analytics for Supply Chain Management	3
Total Required Credits for the Program		9 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The COGS in Supply Chain and Logistical Systems is a Category 3 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Director Contact Information
Jennifer Maden
Assistant Dean and Director of Graduate Studies
Business Hall
856.256.5220
maden@rowan.edu

Certificate of Graduate Study in Technology and Innovation (COGS)

The Technology and Innovation Certificate of Graduate Study (COGS) not only allows students to gain an understanding of the nature of entrepreneurship in various organizational settings, but also why it is essential for today's entrepreneurs to be familiar with technological topics like e- commerce, web marketing, web safety, and legal issues on the web. Students then apply their entrepreneurial knowledge in a real world setting offering advice to improve business performance and address crucial issues.

The Technology and Innovation COGS is a valuable stand-alone credential for those seeking to refresh skills in their current roles. The Technology and Innovation COGS program also serves as a micro-credential on the way toward earning a degree that allows students to sample content before being formally admitted into Rowan's Master of Business Administration (MBA) with an Entrepreneurship Area of Concentration.

Program Requirements

The Technology and Innovation Certificate of Graduate Study at Rowan University requires the completion of nine (9) graduate semester hours (s.h.) made up of three (3) courses.

Required Courses 9 s.h.

(s.h.: semester hours/credit hours)

Choose three (3) from the following options.

Course #	Course Title	S.H.
ENT 06504	Strategic Project-Based Experience	3
ENT 06505	Entrepreneurship and Innovation	3
ENT 06599	Special Topics in Entrepreneurship	3
MGT 06630	Business Processes and Improvement	3
MIS 02515	Electronic Commerce	3

Total Required Credits for the Program 9 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The COGS in Technology and Innovation is a Category 3 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Director Contact Information
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Ric Edelman College of Communication & Creative Arts

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History

The College of Communication was established July 1, 1996, after unanimous final approval by the Rowan University Board of Trustees at their June 1996 meeting. In 2012, the Department of Art joined the college, and the college was renamed the College of Communication & Creative Arts to reflect the full range of programs and courses. On February 12, 2020, the Rowan University Board of Trustees unanimously renamed CCCA the Ric Edelman College of Communication & Creative Arts.

Introduction

The Ric Edelman College of Communication & Creative Arts at Rowan University blends the theoretical, the creative, and the practical, building upon an expansive base of general education courses that serve to develop a liberal arts perspective in all areas. Experimental learning is a strong component of the programs and internships are encouraged or required in all majors.

Departments

The Ric Edelman College of Communication & Creative Arts houses six departments: Art, Communication Studies, Journalism, Public Relations and Advertising, Radio, Television, and Film, and Writing Arts. (Not all departments offer programs through the Division of Global Learning & Partnerships.)

Programs Offered

All programs offered are listed below in order of degree/program type and then in alphabetical order by program name. Details about each program are then listed within the catalog in the same order. For the most up-to-date information regarding mode of delivery options for your program of interest, please visit https://global.rowan.edu.

MASTER'S DEGREE

Program Name	Format/location	Program/Major Codes	Avail FT/PT	Total credits
Diana King Master of Arts in Television Studies	Face-to-Face at Glassboro campus	MA-TELESTU/G030	Both	30
Master of Arts in Strategic Communication	On the Ground/Glassboro campus (some course options available online)	MA-STRATGCOM/G897	Both	33
Master of Arts in Writing	Face-to-Face at Glassboro campus	MA-WRITNG/G608	Both	30

CERTIFICATES OF GRADUATE STUDY / COGS (NON-DEGREE)

Program Name	Format/Location	Program/Major Codes	Avail FT/PT	Total Credits
Certificate of Graduate Study in Creative Writing**	Face-to-Face at Glassboro campus	COG-CREATWR/G641	Both	9
Certificate of Graduate Study in Editing & Publishing for Writers**	Face-to-Face at Glassboro campus	COG-EDITGPUB/G640	Both	9
Certificate of Graduate Study in Integrated Marketing Communication & New Media*	100% Online	COG- IMCNM/G132	Part-time	9
Certificate of Graduate Study in School Public Relations*, ***	100% Online	COG-SCHLPR/G616	Part-time	9
Certificate of Graduate Study in Writing, Composition & Rhetoric**	Face-to-Face at Glassboro campus	COG-COMRHET/G116	Both	9

*courses in this program count toward the Master of Arts in Strategic Communication.

**courses in this program may count toward the Master of Arts in Writing.

*** courses in this program may count toward the Master of Education in Teacher Leadership.

Admissions

For the most up-to-date information regarding admission requirements, entry points, and application deadlines, please visit https://global.rowan.edu/programs. Click on your program of interest to be connected to program and admission details.

Academic Program Policy Categories

For the purposes of both the Minimum Satisfactory Academic Progress policy and the Minimum Graduation Requirements policy, post-baccalaureate/graduate academic programs at Rowan University fall into one of three major categories which are identified by their grade requirements as outlined below. (See individual program descriptions for academic categories.)

Category 1: To maintain Minimum Satisfactory Academic Progress in and to successfully graduate from a Category 1 program students must:

- Earn no more than two total "B-" grades
- Earn no grades lower than a "B-"
- Earn an official cumulative GPA (according to matriculation level) of at least 3.000 on Rowan's 4.000 scale

Category 2: To maintain Minimum Satisfactory Academic Progress in and to successfully graduate from a Category 2 program students must:

- Earn no grades lower than a "B-"
- Earn an official cumulative GPA (according to matriculation level) of at least 3.000 on Rowan's 4.000 scale

Category 3: To maintain Minimum Satisfactory Academic Progress in and to successfully graduate from a Category 3 program students must:

- Earn no more than two total C grades of any combination of "C+" or "C." (C- grades are not acceptable.)
- Earn no grades lower than a "C"
- Earn an official cumulative GPA (according to matriculation level) of at least 3.000 on Rowan's 4.000 scale

Policy Prior to Fall 2013 Matriculation

The academic review and minimum graduation requirements review policies will be applied to Rowan graduate and post-baccalaureate students who matriculate beginning Fall 2013 or later; however, current students (those matriculated and active before Fall 2013) will be grandfathered under the prior policy/practice, whose grade and GPA requirements are the same as Academic Review Category 3.

Master's Degrees

Master of Arts in Strategic Communication (M.A.)

The Master of Arts in Strategic Communication emphasizes real-world applications of theories and techniques offered in an environment that emphasizes collaborative learning. The program attracts a cross section of students with experience levels ranging from recent graduates to senior managers. The Master of Arts in Strategic Communication curriculum grounds students in four key areas: writing, research, problem solving, and planning. While most students choose to take courses in organizational/corporate public relations, students may also choose to take a series of courses in public affairs or educational public relations and design the master's project in those areas.

Program Requirements

The following courses make up the Master of Arts in Strategic Communication program.

- Required Courses: 21 semester hours (s.h.)
- Elective Courses: 12 semester hours (s.h.)

Required Courses 21 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
MAPR 01551	Graduate Strategic Communication Overview	3
MAPR 01547	Graduate Strategic Writing	3
MAPR 01550	Introduction to Graduate Strategic Communication Research	3
MAPR 01569	Graduate Strategic Case Studies and Public Relations	3
MAPR 01561	Graduate Strategic Writing II	3
MAPR 01620	Strategic Communication Seminar (2 semesters)	6

Elective Courses 12 s.h.

Approved modules and electives (depending on concentration). Please discuss with Program Coordinator.

Total Required Credits for the Program 33 s.h.

Foundation Courses

Eligible applicants must have successfully completed the following undergraduate foundation course at an accredited institution. During the admissions process, the Master of Arts in Strategic Communication academic advisor will determine foundation course equivalencies. If applicable, official notification of any unfinished foundation courses will be included in the applicant's official admission decision letter from Rowan University.

FC-1. Publication Layout and Design (JRN 02317) (3 s.h.)

Students admitted without having completed this foundation course may complete it while enrolled in the Master of Arts Strategic Communication program. The foundation course must be taken before completing the program and does not count toward the 33 required semester hours for the master's degree.

Graduation/Exit, Benchmark, and Thesis Requirements

Students write a research project on any aspect of public affairs, educational communication, or corporate communication to complete the program. A comprehensive oral/written exam is also required. (No Thesis)

Minimum Required Grades and Cumulative GPA

The MA in Strategic Communication is a Category 3 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
Bokyung Kim
301 High Street, Room 322
856.256.4293
kimb@rowan.edu

Diana King Master of Arts in Television Studies (M.A.)

The Diana King M.A. in Television Studies offers a graduate degree in Television Studies for students who desire employment in the television industry or to pursue advanced academic study of television theory and criticism. As the television landscape continues to spread across multiple international media platforms, there is a concomitant need for content both on and about television. The Diana King M.A. in Television Studies extends opportunities for career preparation such as screenwriting, TV criticism and doctoral study, and fills a current gap in the market by offering a unique opportunity for students to develop skills that will support them in a range of professional settings with a focus on writing for and about television. Drawing on Edelman CCCA's strengths, the new program extends the College's reach to students who might not otherwise take advantage of these educational opportunities due to location, cost and career intent.

The Diana King M.A. in Television Studies will not only incorporate existing courses from the Radio, Television, & Film Department, but has also developed new, subject-specific, courses that focus not only on critical analysis but also integrate authentic workplace practice with the examination of essential issues in the field. The program's curriculum covers a wide spectrum of television studies courses with written assignments utilizing various skill sets necessary for writing on or about television. Each course will cover the foundations of various TV histories as well as the contemporary television period, this will ensure that students are kept abreast of current, sometimes rapid, transformations in the television landscape. In addition, the program will offer students an academic pathway by preparing them for doctoral study in television studies as well as providing them with experience of teaching in a Higher Education environment. High school teachers and educators will find the Diana King M.A. in Television Studies useful for furthering their education in a discipline that is increasingly popular in schools.

Students pursuing the degree as a preliminary step in advanced academic study in the field will find opportunities to continue their education in Media Studies, Film Studies, Communication Studies and other related Ph.D. programs that increasingly confer degrees on students whose research centers on television.

Program Requirements

Required Courses — 12 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
RTF 10510	Writing for Television	3
RTF 10511	Research Methods in Television Studies	3
RTF 10512	Television Genre and History	3
RTF 10524	Master's Project (final semester only)	3

Elective Courses — 18 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
RTF 10513	The Global Television Industry	3
RTF 10514	Identity on Television	3
RTF 10515	Special Topics	3
RTF 10516	Television Auteurs	3
RTF 10517	The Writers Room	3
RTF 10518	The Evolution of Quality Television	3
RTF 10519	Women and Television	3
RTF 10523	Graduate Screenwriting	3
RTF 10526	Script to Screen	3
RTF 10525	The Rhetoric of Reality TV	3

Total Required Credits for the Program — 30 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and Thesis Requirements

Completion of a Master's project is required of all students.

Minimum Required Grades and Cumulative GPA

The Diana King Master of Arts in Television Studies is a Category 3 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
Kim Akass
Bozorth Hall
akass@rowan.edu

Master of Arts in Writing (M.A.)

The Master of Arts in Writing program encourages students to explore the principles of craft and the theory and practices of writing through courses in fiction, creative nonfiction, writing for children and young adults, digital media, poetry, or other genres. Students may also develop their professional skills through courses in publishing and writing pedagogy. Of particular interest to those students who wish to teach on the college level is our Teaching Experience Program, which allows students to teach Rowan University college composition courses as paid adjunct instructors while completing the Master of Arts in Writing. In the capstone courses, Seminar I and Seminar II, students develop a major project of their own design and in a genre of their own choosing, which may have a creative or scholarly focus.

In their junior year, Rowan University undergraduates majoring in Writing Arts can apply to the Combined Advanced Degree Program (informally known as the 4+1 program). This program will allow students to earn both the Bachelor of Arts and Master of Arts degrees in five years total. Please see the program coordinator for additional information about the Teaching Experience Program and the Combined Advanced Degree Program.

Program Requirements

Required Courses 12 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
MAWR 01554	Core I: Theories and Techniques for Writers	3
MAWR 01559	Core II: Research Methods for Writers	3
MAWR 01561*	Seminar I	3
MAWR 01571*	Seminar II	3

*In the Seminar I and II sequence, students complete their Master's Project.

Elective Courses 18 s.h.

- Along with the required courses, four courses (12 s.h.) must have the subject designation MAWR.
- Two graduate-level courses may have a subject designation other than MAWR. Please discuss with Program Coordinator.

Total Required Credits for the Program 30 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and Thesis Requirements

Master's Project, completed as a course requirement in Seminars I and II

Minimum Required Grades and Cumulative GPA

The MA in Writing is a Category 3 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
Katie Budris
Department of Writing Arts
Victoria Hall, Room 405
856.256.4858
budris@rowan.edu

Certificates of Graduate Study (Non-degree)

Certificate of Graduate Study in Creative Writing (COGS)

By participating in a curriculum that combines the writing workshop model with the study of craft through a close reading of published texts, students will engage in the advanced practices of the genres of their choice. They will learn to engage in a process of composition that, when combined with the development of a critical vocabulary, allows students to give, receive, and use criticism in their revisions. As they discover and develop their individual style, voice, and literary vision, they will acquire the discipline and the creative and organizational strategies necessary to prepare for and advance them toward publication.

Program Requirements

Required Courses 9 s.h.

(s.h.: semester hours/credit hours)

Choose three (3) from the following options.

Course #	Course Title	S.H.
MAWR 02505	Poetry Workshop	3
MAWR 01558	Fiction Workshop	3
MAWR 02515	Creative Nonfiction Workshop	3
MAWR 02520	Writing the Novel	3
MAWR 02521	Writing the Nonfiction Book	3
MAWR 02522	Nonfiction Workshop	3
MAWR 02523	Writing the Memoir	3

Total Required Credits for the Program 9 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The COGS in Creative Writing is a Category 3 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
Katie Budris
Department of Writing Arts
Victoria Hall, Room 405
856.256.4858
budris@rowan.edu

Certificate of Graduate Study in Editing & Publishing for Writers (COGS)

Due to recent changes in the publishing industry (corporate mergers, ever-advancing publishing technologies, radical alterations in traditional book distribution and bookselling) writers are now compelled to be excellent editors and marketers of their own work. Utilizing a curriculum that combines advanced editing and revision of works of the student's own choice (nonfiction book, YA novel, poetry, articles and essays), along with the hands-on opportunities in classes, students will acquire a necessary understanding of contemporary editing and publishing procedures in a variety of print and digital environments, including periodicals, and digital and book publishing, as well as the discipline and organizational strategies necessary to prepare and submit a variety of types of work for publication.

Program Requirements

Required Courses 9 s.h.

(s.h.: semester hours/credit hours)

Choose three (3) from the following options.

Course #	Course Title	S.H.
MAWR 01557	Writing the Freelance Features	3
MAWR 01566	Editing the Literary Journal	3

MAWR 01622	Publishing for Creative Writers	3
MAWR 01623	Writing Stories for Children & Young Adults	3
MAWR 02521	Writing the Nonfiction Book	3
Total Required Credits for the Program		9 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The COGS in Editing & Publishing for Writers is a Category 3 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information

Katie Budris
Department of Writing Arts
Victoria Hall, Room 405
856.256.4858
budris@rowan.edu

Certificate of Graduate Study in Integrated Marketing Communication & New Media (COGS)

The Certificate of Graduate Study (COGS) in Integrated Marketing Communication and New Media provides insight into how company efforts to offer greater accountability from their marketing efforts have intensified, and how new media have proliferated.

This has intensified the search for new ways to get more accountability from marketing communication efforts. The result has been a growing understanding on the part of corporate management that (1) the efficiencies of mass media advertising are not what they used to be; (2) consumers are more sophisticated, cynical, and distrusting than ever before; (3) tremendous gaps exist between what companies say in their advertising and what they actually do; and (4) in the long run, nourishing good customer relationships is far more important than making simple exchanges.

There is now a growing movement toward integrating all the messages created by various communication agencies and sent out by various departments within the company to achieve consistency. This process is known as Integrated Marketing Communication.

Students can use the coursework from this Certificate of Graduate Study and apply it toward the Master of Arts in Strategic Communication program.

Program Requirements

Required Courses 9 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
MAPR 01565	IMC and New Media Overview	3
MAPR 06515	Online Public Relations	3
MAPR 01570	Graduate Media Metrics and Analytics	3
Total Required Credits for the Program		9 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The Certificate of Graduate Study in Integrated Marketing Communication & New Media is a Category 3 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
Bokyung Kim
301 High Street
856.256.4293
kimb@rowan.edu

Certificate of Graduate Study in School Public Relations (COGS)

The School Public Relations Certificate of Graduate Study provides students with a broad overview of School Public Relations and a focus on several essential components of the field. By investigating and assessing real world case studies, students will develop an understanding of the need for formal planning and evaluation of an educational organization's public relations initiatives.

Students can use the coursework from this Certificate of Graduate Study and apply it toward the Master of Arts in Strategic Communication program.

Program Requirements

The School Public Relations Certificate of Graduate Study is a part-time program offered in an accelerated online format. It requires the completion of 9 graduate semester hours (3 courses) which are possible to complete in only 2 to 3 consecutive semesters. The courses that make up the School Public Relations Certificate of Graduate Study may also be applied towards Rowan University's Master of Arts in Strategic Communication program or the IMC & New Media Certificate program.

Coursework

The following courses make up the School Public Relations Certificate of Graduate Study program. Each course is scheduled in 8 week modules with each week of work starting every Tuesday at 8:00 a.m. and ending every Monday at midnight (Eastern Standard Time).

Required Courses 9 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
MAPR 98503	School Public Relations	3
MAPR 01547	Graduate Strategic Writing I	3
MAPR 01570	Graduate Media Metrics and Analytics	3
Total Required Credits for the Program		9 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The Certificate of Graduate Study in School Public Relations is a Category 3 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
Bokyung Kim
301 High Street
856.256.4293
kimb@rowan.edu

Certificate of Graduate Study in Writing, Composition & Rhetoric (COGS)

This nine-credit program for teachers and other writing professionals improves students' knowledge of contemporary theories, issues, and practices in writing and writing instruction. Students develop their writing abilities by analyzing their own writing and that of published writers. Courses emphasize composition theory, writing assessment, and the role of technology in writing.

Program Requirements

Required Courses 9 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
MAWR 01549	Issues in Composition Studies	3
MAWR 01555	Writing for Electronic Communities	3
MAWR 01556	Assessment of Writing	3

Total Required Credits for the Program 9 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The Certificate of Graduate Study in Writing, Composition & Rhetoric is a Category 3 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
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College of Education

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Herman D. James Hall
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mccombst@rowan.edu

Mission

To positively impact and develop local, regional, national, and global educational communities by:

- collaborating with partners in the field to promote learning and the mental and physical health of diverse learners in all settings
- integrating teaching, research, and service to advance knowledge in the field
- preparing and supporting professionals through the development of knowledge, skills, and dispositions with the ultimate goal of ensuring equitable educational opportunities for all learners.

Vision

The College of Education will be a leading force in preparing and supporting reflective practitioners who use education to transform our global society.

College of Education Conceptual Framework Pillars

The four pillars of the College of Education Conceptual Framework are an important foundation that informs who we are and what we truly value. Those pillars are:

1. content and pedagogical knowledge,
2. technology to facilitate teaching and learning,
3. diversity with a commitment to social justice, and
4. impact on student learning.

By building a foundation of content and pedagogical knowledge, using technology to facilitate teaching and learning, valuing diversity with a commitment to social justice, and impacting P-12 student or client learning, we inform our practices and provide a foundation upon which learning evolves.

Programs Offered

The College of Education offers the Bachelor of Arts in Education (Early Childhood, Elementary, Subject-Matter, and Health and Physical Education concentrations); the Bachelor of Arts in Inclusive Education; the Bachelor of Arts in Literacy Studies; and the Bachelor of Arts in Leadership and Social Innovation. The College of Education also offers non-degree teacher certification programs in Reading and Teacher of Students with Disabilities as well as numerous graduate programs. In addition, the Minor in Education is offered.

Accreditation

Rowan University's teacher education program, one of the largest and most comprehensive in New Jersey and in the nation, has been accredited by the National Council for Accreditation of Teacher Education (NCATE), now known as the Council for the Accreditation of Educator Preparation (CAEP), since 1956. In addition, College of Education programs have received national recognition from the following professional organizations:

- ACEI Association for Childhood Education International

- ACTFL American Council on the Teaching of Foreign Languages
- CEC Council for Exceptional Children
- ELCC Educational Leadership Constituent Council
- IRA International Reading Association
- NAEYC National Association for the Education of Young Children
- NASP National Association of School Psychologists
- NASPE National Association for Sport and Physical Education
- NCSS National Council for the Social Studies
- NCTE National Council of Teachers of English
- NCTM National Council of Teachers of Mathematics
- NSTA National Science Teachers Association
- TESOL Teachers of English to Speakers of Other Languages

In addition, the Master of Arts in Counseling in Educational Settings program is accredited by the Council for Accreditation of Counseling and Related Educational Programs (CACREP).
The New Jersey State Department of Education also approves Rowan's programs.

Admission, Retention and Eligibility for Teacher Certification

Admission to Rowan University does not guarantee admission as a teacher certification candidate. Students desiring admission as a teacher certification candidate must file an application. Admission to teaching certification has specific program requirements as outlined on Program Guides. Students are notified of their acceptance at the beginning of their junior year. The same process applies to two-year transfer students but is generally compressed to take place in the fall semester of the junior year. This outline describes the minimum college requirements. Students should check with their advisors and certifying department for specific expectations, program requirements, and standards.

Departments

The College of Education is composed of four academic departments. They include:

- Educational Services and Leadership
- Interdisciplinary and Inclusive Education
- Language, Literacy, and Sociocultural Education
- Science, Technology, Engineering, Art, Mathematics, and Movement (STEAM2)

Support Services

In addition to the academic departments, the College of Education houses several offices that support the academic program including:

The Office of Clinical Experiences

The Office of Clinical Experiences coordinates all field placements, including school or clinical settings required for graduation and state certification applications. The mission of the College of Education is to positively impact and develop local, regional, national and global educational communities by collaborating with partners in the field to prompt learning and the mental and physical health of diverse learners in all settings. The Office of Clinical Experiences is located in the College of Education Advising Center in Herman D. James Hall, 2nd floor. Hours are 8:30 a.m. to 4:30 p.m., Monday through Friday.

The College of Education Advising Center (CEAC)

The College of Education Advising Center provides students with the necessary support and guidance as they pursue their educational goals and courses through the College of Education. It is a resource that offers program advisement for current and prospective students. The center is focused on providing accurate and timely information to assist students who are working toward a degree and/or licensure in a number of professional education careers.

Office of Educator Support and Partnerships (OESP)

The mission of the Office of Educator Support and Partnerships is to provide support to programs and initiatives related to educator preparation. This office supports both initial and advanced programs as well as P-12 partnerships. The Office of Educator Support and Partnerships will provide leadership in the following areas:

- Office of Clinical Experiences
- Professional Development School network
- edTPA
- Praxis Lab
- Teacher pipeline programs

The John J. Schaub Instructional Technology Center

The John J. Schaub Instructional Technology Center consists of a Computer Laboratory and an Instructional Materials Center (IMC). The Instructional Technology Center provides facilities, technology, materials and training in the four areas of Instructional Technology: print technology, audio-visual technology, computer technology, and integrated technology. It is the primary instructional technology resource and training facility for students and faculty in the College of Education.

The IMC houses PreK-12 teaching kits and other materials related to the educational programs offered by the College of Education. It is a comfortable study space that serves as a teachers' library and workroom for students in the College of Education.

The Center for Access, Success, and Equity (CASE)

The Center for Access, Success, and Equity was created to address three overarching topics in education today: access, success, and equity for students in P-20 institutions. The overall goal is to "turn research into practice" and have a direct impact on the educational outcomes of students by completing extensive research, offering professional services, and engaging in policy creation and reform. We view all three of these actions as overlapping and intertwined with one another, with one component complementing, or leading into, the next. It is our hope to develop a three-prong system that incorporates all of these highly important educational factors into our daily operations.

Rowan University Early Childhood Demonstration Center

A high-quality early childhood program that focuses on developmentally appropriate practices and project approaches. The program accepts children aged 2.5 - 6 from Rowan and outside communities.

Programs Offered

All programs offered are listed below in order of degree/program type and then in alphabetical order by program name. Details about each program are then listed within the catalog in the same order. For the most up-to-date information regarding mode of delivery options for your program of interest, please visit https://global.rowan.edu/programs.

DOCTORAL DEGREES/EDUCATIONAL SPECIALIST DEGREE

Program Name	Format/Location	Program/Major Codes	Avail FT/PT	Total Credits
Doctor of Education in Educational Leadership	Face-to-Face/Glassboro or Camden campus (track courses 100% online)	EDD-EDLDRSHP/D928	Part-time	60
	Hybrid: 60% Online & 40% Face-to-Face at NJPSA (New Jersey Principals and Supervisor's Association) in Jamesburg, NJ (track courses 100% online)		Part-time	60
	Online with 2 residencies on the Glassboro campus		Part-time	60
Doctor of Philosophy in Education	Face-to-Face/Glassboro campus	PHD-EDU/D800	Full-time	72
Educational Specialist in School Psychology: School Psychologist Certification†	Face-to-Face/Glassboro campus	EDS-SCHPSYCH/ES03	Both	39

MASTER'S DEGREES

Program Name	Format/Location	Program/Major Codes	Avail FT/PT	Total Credits
Master of Arts in Counseling in Educational Settings†	Face-to-Face/Glassboro campus (fall entry) or Face-to-Face/Camden campus (spring entry)	MA-COUNEDSET/G825	Both	48
Master of Arts in Educational Technology	Online	MA-EDTECHNOL/G842	Full-time	33
Master of Arts in Higher Education	Face-to-Face/Glassboro campus	MA-HIGHED/G807	Both	36
Master of Arts in Reading Education Concentration: Reading Practitioner	Online	MA-READED/G830/C850	Part-time	30

Master of Arts in Reading Education Concentration: Reading Specialist†	Hybrid	MA-READED/G830/C851	Part-time	34
Master of Arts in STEM Education†	Hybrid/Glassboro campus	MA-STEM/G845	Full-time	33
Master of Arts in School Administration†	Hybrid: 100% online coursework with a total of 2 Face-to-Face meetings during the program	MA-SCHADMIN/G827	Part-time	36
Master of Arts in School Psychology	Face-to-Face/Glassboro campus	MA-SCHPSYCH/G822	Both	33
Master of Arts in Special Education†	Face-to-Face/Glassboro campus	MA-SPECED/G809	Both	30-36 depending upon track selected
	Online		Part-time	30-36 depending upon track selected
Master of Arts in Urban Education and Community Studies	Face-to-Face/Camden campus	MA-URBANEDCS/G843	Part-time	36-40
Master of Education in Teacher Leadership	100% Online or Hybrid (depending upon content COGS selected)	MED-TCHLD/G815	Part-time	30-40 depending upon content COGS selected
Master of Science in Teaching: Subject Matter Education†	Hybrid/Glassboro campus	MST-SEED/G802	Full-time	33
Master of Science in Teaching: Subject Matter Education–Theatre Education†	Hybrid/Glassboro campus	MST-THRED/G008	Full-time	33

CERTIFICATES OF ADVANCED GRADUATE STUDY (NON-DEGREE)

Program Name	Format/Location	Program/Major Codes	Avail FT/PT	Total Credits
Certificate of Advanced Graduate Study in Principal Preparation**†	100% Online	CAG-PRINCIPL/G628	Part-time	24
Certificate of Advanced Graduate Study in Student Assistance Coordination	Face-to-Face/Glassboro campus	GCT-STUACP/G638	Part-time	24
Certificate of Advanced Graduate Study in Supporting Mental Health and Social Emotional Learning in Educational Settings	Face-to-Face/Glassboro campus	CAG-SUMHLTED/G935	Both	12
	Online		Both	12

CERTIFICATES OF GRADUATE STUDY (NON-DEGREE)

Program Name	Format/Location	Program/Major Codes	Avail FT/PT	Total Credits
Certificate of Graduate Study in Adapted Physical Activity	Online	TBD/TBD	Part-time	12
Certificate of Graduate Study in Early Childhood Coaching and Technical Assistance	Online	COG-ECHLDCTA/G143	Part-time	15
Certificate of Graduate Study in Early Childhood Education	Online	COG-EECE/G804	Part-time	15
Certificate of Graduate Study in Early Childhood Special Education	Online	COG-ECSPED/G819	Part-time	15

Certificate of Graduate Study in Early Childhood STEM Education	Online	COG-ECSTEMED/G820	Part-time	15
Certificate of Graduate Study in Educational Technology*	100% Online	COG-EDTECH/G124	Part-time	15
Certificate of Graduate Study in English as a Second Language (ESL)*†	100% Online	COG-ESL/G604	Part-time	16-21 depending on teaching certification status
Certificate of Graduate Study in Learning Disabilities	100% Online	COG-LRNDIS/G138	Part-time	15
Certificate of Graduate Study in Reading	100% Online	COG-READ/G630	Part-time	15
Certificate of Graduate Study in Reading/Writing Literacy	Hybrid/Glassboro campus	COG-RWLITRCY/G126	Part-time	15
Certificate of Graduate Study in Special Education*	100% Online	COG-SPED/G127	Part-time	15
Certificate of Graduate Study in Teacher Leadership*	100% Online	COG-TCHLDR/G145	Part-time	18
Certificate of Graduate Study in Teaching in Urban and Diverse Settings	Online	COGS-TCHURBDV/G146	Part-time	12

CERTIFICATIONS, ENDORSEMENTS & RELATED POST-BACCALAUREATE PROGRAMS (NON-DEGREE)

Program Name	Format/Location	Program/Major Codes	Avail FT/PT	Total Credits
Learning Disabilities Teacher-Consultant (LDTC) Certification†	100% Online	GCT-LRNDIS/G618	Part-time	27
Supervisor Certification **†	100% Online	GCT-SPRVSR/G629	Part-time	12
Graduate Endorsement: Bilingual/Bicultural Education†	100% Online	GE-BILINGCUL/G605	Part-time	12
Graduate Endorsement for Teacher of Students with Disabilities†	Face-to-Face/Glassboro campus	GE-TCHSTUDIS/G609	Part-time	21 – Program is intended for those who already have teacher certification.
	100% Online		Part-time	21 – Program is intended for those who already have teacher certification.
Post-Baccalaureate: Teacher of Reading †	Face-to-Face/Glassboro campus	CRT-READ/9830	Part-time	30
Post-Baccalaureate: Teacher of Students with Disabilities†	Face-to-Face/Glassboro campus	CRT-TCHSTDIS/9811	Full-time/Part-time	24-27
	100% Online		Part-time	24-27
Post-Baccalaureate: School Nursing Certification †	Hybrid/Glassboro campus	CRT-SCHNURSG/9221	Part-time	18

*Coursework in this program counts as approximately one-half of the coursework required for the Master of Education in Teacher Leadership.

**Coursework in this program counts toward the coursework required for the Master of Arts in School Administration.

***Coursework in this program counts toward the coursework required for the Doctor of Education in Educational Leadership program.

† The New Jersey Department of Education (NJ DOE), not Rowan University, grants certifications based on requirements set by the state. While coursework for specific programs meets the academic requirements for NJ DOE certification, it is the student's responsibility to ensure that all other certification requirements are met, including, but not limited to, appropriate type and level of license and years of experience. NJ DOE certification requirements are subject to change. Certification applications are evaluated, by NJ DOE, based on the most current state requirements. For current NJ DOE licensure information, go to www.state.nj.us/education/educators/license/.

Admissions

For the most up-to-date information regarding admission requirements, entry points, and application deadlines, please visit https://global.rowan.edu/programs. Click on your program of interest to be connected to program and admission details.

Academic Program Policy Categories

For the purposes of both the Minimum Satisfactory Academic Progress policy and the Minimum Graduation Requirements policy, post-baccalaureate/graduate academic programs at Rowan University fall into one of three major categories which are identified by their grade requirements as outlined below. (See individual program descriptions for academic categories.)

Category 1: To maintain Minimum Satisfactory Academic Progress in and to successfully graduate from a Category 1 program students must:

- Earn no more than two total "B-" grades
- Earn no grades lower than a "B-"
- Earn an official cumulative GPA (according to matriculation level) of at least 3.000 on Rowan's 4.000 scale

Category 2: To maintain Minimum Satisfactory Academic Progress in and to successfully graduate from a Category 2 program students must:

- Earn no grades lower than a "B-"
- Earn an official cumulative GPA (according to matriculation level) of at least 3.000 on Rowan's 4.000 scale

Category 3: To maintain Minimum Satisfactory Academic Progress in and to successfully graduate from a Category 3 program students must:

- Earn no more than two total C grades of any combination of "C+" or "C." (C- grades are not acceptable.)
- Earn no grades lower than a "C"
- Earn an official cumulative GPA (according to matriculation level) of at least 3.000 on Rowan's 4.000 scale

Policy Prior to Fall 2013 Matriculation

The academic review and minimum graduation requirements review policies will be applied to Rowan graduate and post-baccalaureate students who matriculate beginning Fall 2013 or later; however, current students (those matriculated and active before Fall 2013) will be grandfathered under the prior policy/practice, whose grade and GPA requirements are the same as Academic Review Category 3.

Doctor of Education in Educational Leadership (Ed.D.)

The Doctor of Education in Educational Leadership (Ed.D.) program develops social justice leaders who are change agents, ethical leaders, and scholar-practitioners. By tightly connecting theory and practice in coursework, the program supports students in applying learning immediately in coursework and in the workplace. This program offers students a unique opportunity to engage in applied inquiry throughout the program with the deliberate focus on preparing practitioners to lead initiatives and organizations that redress inequities and promote social justice.

Benchmarks & Dissertation

The Doctor of Education in Educational Leadership degree at Rowan University requires the completion of 60 graduate semester hours (s.h.) made up of 16 courses (48 s.h.) and 12 s.h. of dissertation. The program includes three distinct benchmarks. Benchmark I takes place after the completion of the first year of coursework. Benchmark II consists of a presentation of dissertation proposal to a committee of faculty. Benchmark III is the dissertation symposium.

Track Options

The doctoral program offers 5 tracks. Each track includes 5 specialized courses. All of the track courses are offered 100% online, regardless of the overall delivery format chosen. The 5 track options are:

1. Higher Education: This track is for educators who are looking to gain advanced knowledge in the field of higher education, with a special focus on administration and leadership at the post-secondary/four-year college level.
2. P-12: This track is for those educators who are looking to gain advanced knowledge in the field, with a special focus on developing the leadership skills and dispositions necessary to enact lasting and meaningful change within the preschool through secondary school levels.
3. Nurse Educator: This track is for those educators who are looking to gain advanced knowledge in the field, with a special focus on educating nurses.
4. Community College Leadership Initiative (CCLI): This track is typically offered on a biennial basis. This track is for those educators who are looking to gain advanced knowledge in the field, with a special focus on community college.
5. Instructional Technology: This track is designed for educators who want to gain experience and skills with the integration of technology into the educational environment.

Residency Requirement

The Doctor of Education in Educational Leadership program is available in a number of different delivery modes, including online. Those who choose the online delivery format will be required to complete 2 residencies as outlined below:

- Residency I: Students will spend their first residency on the campus of Rowan University becoming familiar with campus resources, University policies and procedures, the mission and conceptual framework of the College, and program expectations of the Educational Leadership Department. This orientation-based residency is a wonderful introduction to the doctoral experience that serves to enhance the online learning environment by providing a face-to-face opportunity to engage with cohort members and Educational Leadership faculty and staff. Students will attend workshops designed to acquaint them with leadership development, research skills, change strategies, reflective practice, social justice issues, and the development and implementation of professional learning communities.
- One day at Rowan's Glassboro campus for the written portion of the Benchmark I exam. The exam is given twice per year. Students choose when they wish to take it after the completion of foundational first-year coursework.
- Residency II: This residency will also occur on the campus of Rowan University and will focus on preparing students for dissertation work and the dissertation process.

Program Requirements

Required Courses for All Tracks 36 s.h.

(s.h.: semester hours)

Course #	Course Title	S.H.
EDST 27801	Leadership for Social Justice	3
EDST 27802	Inquiry I: Theory to Practice	3
EDST 27803	Reforming Organizations	3
EDST 27804	Inquiry II: Assessment and Program Evaluation	3
EDST 27805	Public Policy, Ethics, and Contemporary Issues	3
EDST 27806	Inquiry III: Policy Inquiry, Analysis, and Entrepreneurship	3
EDST 27807	Sustainable Institutional Change	3
EDST 27808	Inquiry IV: Inquiry for Improvement	3
EDST 27809	Literature Review	3
EDST 27810	Leader Scholar Community I	3

Required Track Courses 12 s.h.

Doctor of Education in Educational Leadership students must complete the four courses in their selected track. (Track is selected during the application process.)

Course #	Course Title	S.H.
Higher Education Track Courses		
EDST 27840	History and Context of American Higher Education	3
EDST 27841	Higher Education Governance and Leadership	3
EDST 27842	Legal and Administrative Issues in Postsecondary Education	3
EDST 27843	Leadership and Advocacy for Student Success	3
P-12 Track Courses		
EDST 27821	Instructional Leadership	3
EDST 27820	Educational Leadership for Equity and Diversity	3
EDST 27822	Equitable Finance and Budgeting	3
EDST 27823	Building Board and Community Relations	3
Nurse Educator Track Courses		
EDST 27830	Curriculum Development and Instructional Design	3
EDST 27831	Assessment and Evaluation for Nurse Educators	3
SNUR 92753	Practicum in Nursing	3
	Select course from another track	3
Community College Track Courses		
EDST 27850	History and Context of American Community Colleges	3
EDST 27851	Community College Governance and Leadership	3
EDST 27852	Legal and Administrative Issues in Community Colleges	3
EDST 27853	Leadership and Advocacy for Community College Success	3
Instructional Technology Track Courses		
EDTC 33580	Introduction to Technology Education	3
EDTC 33584	Digital Citizenship in 21st Century Schools	3
EDTC 33510	Emerging Technology Tools and the Curriculum	3
EDTC 33585	Internet in the Classroom	3

Required Dissertation Research Course

Doctor of Education in Educational Leadership students must complete a minimum of 12 semester hours of Dissertation Research.

Course #	Course Title	S.H.
EDST 24795	Dissertation Research	12

Note about Dissertation Research: In order to maintain matriculation in the program, students must register for at least 1 semester hour of EDST 24795 (Dissertation Research) per term until their dissertation is complete and approved and at least 12 Dissertation Research semester hours total have been completed.

Total Required Credits for the Program 60 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and/or Thesis Requirements

Dissertation: Students must successfully complete and defend dissertation.

Benchmarks: *Successful completion of all benchmarks is required for continuation in and graduation from the program. Details regarding benchmarks' timing and assessments will be shared with the student throughout the program by the academic advisor.*

Benchmark I:

- *Timing*: Occurs after the completion of the first year of coursework.
- *Requirements*: Benchmark I consists of completing and defending a literature review around topical area(s) surrounding a student's dissertation interest.
- *Options*: If the student does not successfully pass this benchmark on the first try, then the student is invited make a second attempt to pass the benchmark. Students will not be permitted to continue coursework until this benchmark requirement is satisfied. The student who does not pass on the second attempt will be dismissed from the program.

Benchmark II:

- *Timing*: Occurs after the completion of the dissertation proposal.

- *Requirements*: Student may present his or her dissertation proposal at a time mutually agreed upon by the student and his or her dissertation committee. The dissertation proposal must be approved before moving onto the completion of the dissertation project.
- *Options*: If the student does not successfully pass the benchmark, meaning an approved dissertation proposal is not obtained, then the student is able to revise and take again while continuing dissertation coursework.

Benchmark III:

- *Timing*: Occurs after the completion of 60 s.h. and completion of dissertation.
- *Requirements*: Student must successfully complete and defend a dissertation at a final symposium.
- *Options*: If the student does not successfully pass the benchmark, then the student may resubmit and defend the dissertation. If still unsuccessful, student will not be approved for graduation from the program.

Minimum Required Grades and Cumulative GPA

The Ed.D. in Educational Leadership is a Category 1 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

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Doctor of Philosophy in Education (Ph.D.)

The Doctor of Philosophy in Education is a multi-disciplinary research-focused degree anchored in the educational complexities of access, success, and equity that is designed to prepare candidates globally to assume roles as faculty and researchers in one of five concentrations: Counselor Education, Literacy Education, Higher and Postsecondary Education, Special Education, and Urban and Diverse Learning Environments. The unique underpinning of this program is the intersection of two primary research foci: (1) a commitment to redressing systemic and persistent barriers to quality education and (2) a dedication to using rigorous empirical research with area schools, districts, colleges, and other educational partners to improve equity in educational outcomes. The Doctor of Philosophy offers its candidates opportunities to engage in research, college level teaching, and clinical experiences that respond to the regions and the nation's persistent challenges with educational access and equity in traditionally underserved communities.

The Doctor of Philosophy at Rowan University requires the completion of 72 graduate semester hours (s.h.) made up of 21 s.h. of core courses, 15 s.h. of research courses, 15 s.h. of concentration specific courses, and 21 s.h. of dissertation.

Concentrations

The doctoral program offers five (5) concentrations:

1. Counselor Education: The Counselor Education concentration is designed specifically for those who wish to pursue careers as counselor educators at the university level, or as supervisors in schools or clinical settings. The program is committed to promoting the counseling profession and evidenced-based practices and initiatives through advanced curricular experiences that address systemic and persistent barriers for P-20 students.
2. Higher and Postsecondary Education: The Higher and Postsecondary Education concentration of the Ph.D. in Education prepares students to conduct research on higher education organizations, students, and policy. Our graduates will pursue careers as academic faculty, researchers, senior college and university administrators, and policy analysts. Our curriculum provides a strong theoretical foundation in organizational theory, public policy, and issues of social justice in postsecondary institutions.
3. Language and Literacy Education: The Language and Literacy Education Ph.D. concentration is designed to prepare individuals for roles in research, policy, and teaching in higher education. The courses examine influential theories and research that address the developmental, cognitive, motivational, multimodal, literary, linguistic, sociocultural and sociopolitical foundations of language and literacy. The program is strongly framed by a critical stance that emphasizes the transformative potential of language and literacy. Candidates for the literacy education doctorate conduct research examining major issues around the interaction of theory, research, and practice in their role in promoting access, equity and success across a range of educational contexts.
4. Special Education: Students in the Special Education concentration examine critical issues in the field of special education and disability studies in education (DSE). The program encourages progressive thinking about traditional segregated special education practices, and changing educational structures to be fully inclusive for all students and

families. At Rowan University, students and faculty engage in progressive research that promotes the development of inclusive schools and educational policy.

5. Urban and Diverse Learning Environments: The Urban and Diverse Learning Environments concentration is designed to prepare future researchers, educators, community organizers, policymakers, and youth-focused change agents to understand and disrupt the contradictions that underpin educational and broader socioeconomic disparities. Our faculty actively engage in studying and challenging the social, political, and economic forces that bear on what is often labeled as "urban schooling," and shape the contradictions faced by youth, families, teachers, and educational leaders in these diverse learning environments that so often can be characterized by both oppression and resilience.

Program Requirements

Required Courses for All Concentrations 21 s.h.

(s.h.: semester hours)

Course #	Course Title	S.H.
CASE 90800	Current Issues and Research in Access, Success, and Equity in Education	3
CASE 90801	Research Seminar in Access, Success, and Equity	3(*6)
CASE 90802	Internship in the Academic Profession, Professoriate, and Promoting Student Success	3)
CASE 90803	Equity, Success, and Access Educational Research	3

*Students will enroll in CASE 90801 twice for a total of 6 s.h.

Required Research Courses for all Concentrations 15 s.h.

Course #	Course Title	S.H.
CASE 90718	Research Literature Analysis & Writing	3
CASE 90810	Quantitative Research Methods in Education	3
CASE 90811	Multivariate Research Methods in Education	3
CASE 90812	Qualitative Research Methods in Education	3
CASE 90814	Advanced Qualitative Research Methods in Education	3

Concentration Courses 15 s.h.

Course #	Course Title	S.H.
Counselor Education Concentration Courses		
CASE 90820	Advocacy, Leadership, and Professional Issues in Counselor Education	3
CASE 90821	Advanced Practicum in Counseling for Equitable Career and College Readiness	3
CASE 90822	Advanced Theories of Individual and Group Counseling for Academic, Social/Emotional, and Career Development	3
CASE 90823	Supervision in Counselor Education	3
CASE 90824	Advanced Theories in Family and Systems Counseling, Consultation, and Community Engagement for Educational Access	3
CASE 90825	Practicum in Counseling Supervision	3
CASE 90826	Advanced Assessment and Program Evaluation Procedures in Counseling for Access, Equity, and Success	3
Higher and Postsecondary Education Concentration Courses		
CASE 90830	Foundations of Student Access, Retention, & Equitable Outcomes in Postsecondary Education	3
CASE 90831	Organizational Analysis and Administration of Postsecondary Education	3
CASE 90832	International and Comparative Higher Education	3
CASE 90833	Public Policy and Analysis in Postsecondary Education	3
CASE 90834	Student Learning & Development: Impact of Postsecondary Education	3
CASE 90835	Theoretical and Conceptual Frameworks in Higher Education	3
CASE 90836	Assessment and Evaluation in Postsecondary Education	3
Language and Literacy Concentration Courses		
CASE 90840	Theoretical Perspectives in the Study of Literacy	3
CASE 90841	Transliteracy and Translingualism	3
CASE 90842	Multicultural and Multilingual Issues in Literacy Education	3
CASE 90843	Literacy as Practice in and Outside of School	3
CASE 90844	First and Second Language Acquisition	3
CASE 90845	Children's Literature and Literacy Theory	3
CASE 90846	Sociolinguistics and Discourse Analysis	3

Special Education Concentration Courses

CASE 90850	Access, Success, and Equity in Special Education	3
CASE 90851	Research to Practice in Special Education	3
CASE 90852	Program Evaluation and Planning in Special Education	3
CASE 90853	Leadership, Policy, and Ethics in Special Education	3
CASE 90854	Personnel Preparation and Effective Teaching in Special Education	3
CASE 90855	Evidence Based Practices in Special Education	3
CASE 90856	Current Issues in Special Education	3
CASE 90859	Special Topics in Special Education	3

Urban and Diverse Learning Environments

CASE 90710	Power & Privilege: The Social Construction of Difference	3
CASE 90712	Examining Intersectionality: Critical Theories of Race, Class, Gender, Sexuality and Citizenship	3
CASE 90713	History of Urban Education and Communities	3
CASE 90714	Education Reform in the US: Theories of Change	3
CASE 90715	Structural, Cultural and Demographic Displacement in Urban Educational Contexts	3

Required Dissertation Research Course

Ph.D. students must complete a minimum of 21 semester hours of Dissertation Research.

Course #	Course Title	S.H.
CASE 90890	Dissertation Research	21
Total Required Credits for the Program		72 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and/or Thesis Requirements

- Students must successfully complete and defend a dissertation.

Benchmarks: *Successful completion of all benchmarks is required for continuation in and graduation from the program. Details regarding benchmarks' timing and assessments will be shared with the student throughout the program by the Academic Advisor.*

Benchmark I:

- *Timing*: Successful completion of Annual Portfolio Review (Year 1 and Year 2).
- *Requirements*: Students will prepare a portfolio that addresses reflections on and significant milestones regarding five prongs: 1. Content Expertise; 2. Conceptual/Theoretical Frameworks; 3. Research; 4. Teaching; and 5. Professional Service and Conduct. Students should also prepare a portfolio that provides substantiating evidence for each prong.

Benchmark II:

- *Timing*: Taken in year 3 of the program.
- *Requirements*: All doctoral candidates are required to pass a comprehensive examination prior to dissertation. The exam assesses candidates' knowledge of research methodology and substantive theoretical and empirical issues, and serves as assessment of competencies that are relevant to the development of the dissertation.

Benchmark III:

- *Timing*: Occurs after the completion of all 51 prescribed semester hours and successful completion of the Ph.D. comprehensive examination.
- *Requirements*: Student must successfully complete the Ph.D. Dissertation Proposal.

Benchmark IV:

- *Timing*: Occurs after the completion of a minimum of 21 s.h. of required dissertation research credits and successful completion of the Ph.D. Dissertation Proposal.
- *Requirements*: Student must successfully complete the Ph.D. Final Dissertation Defense.

Minimum Required Grades and Cumulative GPA

The Ph.D. in Education is a Category 1 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
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LLSC Department Program Concentrations (Language and Literacy; Urban and Diverse Learning Environments)
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Educational Specialist in School Psychology – School Psychologist Certification (Ed.S.)

The Educational Specialist is an advanced degree that enables the candidate to develop practitioner expertise in psychological, educational, professional and related areas. Candidates hone skills in assessment, consultation, counseling and intervention to prepare to work with children and adolescents, parents, guardians, teacher and other educational professionals in a school setting. To earn the Educational Specialist degree, a candidate must complete all courses, a school-based 300 hour practicum, and a school-based 1200-hour externship/internship.

Upon completion of the Educational Specialist degree, candidates are eligible for New Jersey Department of Education certification as a school psychologist†. Rowan University Educational Specialist graduates may also apply to become a Nationally Certified School Psychologist (NCSP), Rowan University's School Psychology program is an approved program by the National Association of School Psychology (NASP).

Program Requirements

Required Courses 39 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
METL 50512	Curriculum Development for Teachers Leaders and Other School Professionals	3
EDSU 28546	Educational Organization and Leadership	3
SPSY 06627	Cognitive Assessment & Data-Based Decision Making	3
SPSY 06628	Psychoeducational Assessment & Data-Based Decision Making	3
SPSY 06629	Behavioral-Social Assessment & Data-Based Decision Making	3
SPSY 06632	School Psychology: Consultation, Collaboration & Intervention	3
SPSY 08545	Home/School/Community Collaboration	3
SPSY 08547	Professional School Psychology	3
SPSY 22630	Practicum in School Psychology	3
SPSY 22623	Internship in School Psychology	3(*4)
or SPSY 22634	Internship in School Psychology	6 (*2)

*Students should take two 6 s.h. SPSY 22634 Internship in School Psychology courses or four 3 s.h. SPSY 22623 Internship in School Psychology courses.

Total Required Credits for the Program 39 s.h.

Foundation Courses

Those graduate students completing the Master of Arts in School Psychology at Rowan University do not need to complete the following when applying for the Educational Specialist in School Psychology: a) statement of personal objectives; b) letters of recommendation; c) interview; d) on-site writing sample or; e) pay the application fee.

Graduation/Exit, Benchmark, and/or Thesis Requirements

Practicum Portfolio and Internship Portfolio

Minimum Required Grades and Cumulative GPA

The Educational Specialist in School Psychology is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
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MASTER'S DEGREES

Master of Arts in Counseling in Educational Settings (M.A.)

This program leads to a Master of Arts degree in Counseling in Educational Settings and also New Jersey certification in School Counseling. Graduates may work in elementary, middle, and/or secondary school settings, providing student counseling services. Such services include individual and group counseling for students regarding personal, social, and educational needs; consultation with faculty and other professional staff; assessment of individual students regarding personal-social, academic and career interests and needs; consultation with families regarding the individual's educational progress and career-related plans; and working cooperatively with community resources. A number of our graduates seek careers in Higher Education settings: Residence Hall, Student Services, and Career and Academic Planning. Additionally, agencies and non-profit organizations seek students who graduate from this program.

Program Requirements

Required Courses 48 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
COUN 26501	Introduction to Counseling & Guidance	3
COUN 26520	Design & Coordination of Developmental Counseling Programs	3
COUN 26526	Individual Counseling Procedures	3
COUN 26509	Group Counseling in Educational Settings	3
COUN 26582	Career Counseling in Educational Settings	3
COUN 26524	Assessment & Appraisal Procedures in CES	3
PSY 09560	Lifespan Development	3
COUN 26525	Multicultural Counseling & Advocacy in Educational Settings	3
COUN 26597	Intervention & Referral Services/School Teams & Community Resources	3
COUN 26523	Counseling Interviewing Skills & Techniques	3
COUN 26603	Research & Evaluation Procedures/Counseling in Educational Settings	3
COUN 26527	Practicum/Counseling in Educational Settings	3
COUN 26601	Internship/Counseling in Educational Settings (3 credits Fall and 3 credits Spring)	6
COUN 26528	Ethics, Leadership, and Advocacy	3
COUN 26529	Diagnosis in Educational Settings	3
COUN 26530	Children and Adolescent Counseling in Schools and Communities	3
COUN 26652	Neurodiverse Learning and Social Emotional Development	3

Restricted Elective Courses 6 s.h.

(s.h.: semester hours/credit hours)

Choose two (2) of the following courses:

Course #	Course Title	S.H.
COUN 26650	Mental Health Awareness and (Emotional) Crisis Management in Educational Settings	3
COUN 26651	Trauma Informed Practices for Social Emotional De velopment in Educational Settings	3
COUN 26653	Promoting Self Care and Wellness in Educational and Professional Settings	3
COUN 26540	Post Secondary and College Counseling	3
COUN 26550	Introduction to Play Therapy	3

Total Required Credits for the Program 60 s.h.

Foundation Courses

None

Graduation/Exit/Thesis Requirements

- An Action Research project must be completed to demonstrate advocacy from a social justice framework.
- Continual assessment is utilized to evaluate professional dispositions.

Minimum Required Grades and Cumulative GPA

The Master of Arts in Counseling in Educational Settings is a Category 1 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
Dr. Zalphia Wilson-Hill
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Master of Arts in Educational Technology (M.A.)

The Master of Arts in Educational Technology program will offer graduate-level students the expertise and proficiencies needed to incorporate the existing and emerging educational technologies into their classroom and school organization. Individuals completing this online program will not only be skilled in the use of technology resources in the classroom, they will be prepared to assume leadership roles in educational technology in preschool to twelfth grades.

Through intensive seven-week* online courses, graduate level students will be able to complete the program in two years. This graduate program is intended for educators and educational leaders who place a high value on successful teaching and learning through the use of educational technology.

The purpose of the program is to help teacher leaders and administrators reflect on educational technology best practices and discover ways to expertly infuse technology into teaching so as to improve student learning and engagement. Additionally, students in the program will investigate the philosophical, psychological, sociological, and educational implications of emerging technology tools and their impact on schools. Current relationships between theory and practice, along with future technologies, will be examined.

Teachers in the state of New Jersey may apply to the Master of Arts in Educational Technology program through the New Jersey Teacher Outreach Program (NJTOP®).

Program Requirements

Required Courses 33 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
EDTC 33580	Introduction to Educational Technology	3
EDTC 33584	Digital Citizenship in 21st Century Schools	3
EDTC 33510	Emerging Technology Tools and the Curriculum	3
EDTC 33585	Internet in the Classroom	3
SPED 08540*	Technology for Students with Disabilities	3
EDTC 33540	Developing Online Resources for P-12 Students	3
EDTC 33561	Leading for Effective Educational Technology	3
EDTC 33550	Learning through Gamification	3
EDTC 33531	Coding and Logical Thinking to Support Learning	3
EDTC 33570	Researching and Analyzing Educational Technology	3
EDTC 33600	Seminar in Educational Technology	3

*SPED 08540 is an eight-week online course.

Total Required Credits for the Program 33 s.h.

Foundation Courses

None

Graduation/Exit/Thesis Requirements

Students will be required to create an e-portfolio demonstrating the key projects that they created in the required courses. An additional requirement for this capstone project would be to create a P-12 student-facing portion of the site and an educational leader-facing portion.

Minimum Required Grades and Cumulative GPA

The Master of Arts in Educational Technology is a Category 1 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
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Master of Arts in Higher Education (M.A.)

The Master of Arts in Higher Education is intended for individuals who wish to pursue administrative and student affairs careers at two- or four-year institutions. This program offers two (2) concentrations:

Administration and Student Affairs (Concentration P807)

Graduates of this program go on to careers in academic and student affairs including administration, residential life, admissions, academic advising, student activity planning and programming, judicial affairs, and service learning/volunteerism.

Students in this concentration are required to prepare and keep a portfolio throughout the duration of the program experience. The portfolio serves as a tool to help faculty observe student progress and learning which is assessed through a Synthesis/Reflective Application Exercise conducted usually at the end of the first year of study but prior to enrolling in the Seminar/Internship in Higher Education Administration I capstone course.

Academic Advising

The Academic Advising concentration is intended for those individuals who wish to increase their knowledge and skills as well as those who seek an entry level position in a 2-year or 4-year college or university, specifically in an academic advising role in higher education, whether in an advising center, an academic department or college, or in a tutoring center or other specialized academic setting.

Students in this concentration are required to prepare and keep a portfolio throughout the duration of the program experience. The portfolio serves as a tool to help faculty observe student progress and learning which is assessed through a Synthesis/Reflective Application Exercise conducted usually at the end of the first year of study but prior to enrolling in the Seminar/Internship in Higher Education Administration I capstone course.

Program Requirements

Required Courses

Students select one track area from the options below and complete the listed courses.

Administration/Student Affairs — 36 s.h.

Course #	Course Title	S.H.
CURR 29504	Understanding Adult Learning & Development	3
EDAM 27620	Legal Issues in Higher Education	3
EDAM 27622	Planning & Resource Allocation in Higher Education	3
EDAM 27623	Diversity in Higher Education	3
EDAM 27628	Seminar/Internship in Higher Education Administration I (Capstone course)	3
EDAM 27629	Seminar/Internship in Higher Education Administration II (Capstone course)	3
EDAM 27637	Higher Education Administration	3
EDAM 27737	The College Student: Issues & Support Programs	3
EDST 24501	Procedures & Evaluation in Research	3
HIED 06605	Higher Education in America	3

Restricted Electives: *6 s.h. of pre-approved restricted electives. Please consult with the Academic Advisor*

Academic Advising — 36 s.h.

Course #	Course Title	S.H.
COUN 26509	Group Counseling in Educational Settings	3
COUN 26523	Counselor Interviewing Skills & Techniques	3
COUN 26582	Career Counseling in Educational Settings	3
CURR 29504	Understanding Adult Learning & Development	3
EDAM 27620	Legal Issues in Higher Education	3
EDAM 27623	Diversity in Higher Education	3
EDAM 27628	Seminar/Internship in Higher Education Administration I (Capstone course)	3
EDAM 27629	Seminar/Internship in Higher Education Administration II (Capstone course)	3
EDAM 27630	Academic Advising in Higher Education	3
EDAM 27737	The College Student: Issues & Support Programs	3
EDST 24501	Procedures & Evaluation in Research	3
HIED 06605	Higher Education in America	3

Foundation Courses

None

Graduation/Exit, Benchmark, and/or Thesis Requirements

Administration & Academic Advising: Thesis or major research project

Minimum Required Grades and Cumulative GPA

The Master of Arts in Higher Education is a Category 3 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information

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Master of Arts in Reading Education (M.A.)

The Masters of Arts in Reading Education is nationally accredited by the National Council for Accreditation in Teacher Education in conjunction with the International Literacy Association. Students in the program will have the opportunity to develop both a contemporary conceptual framework and effective strategies that are appropriate for guiding literacy development in classroom and clinical environments.

The goals and objectives for the program and for the individual courses therein are aligned with the International Literacy Association standards, preparing reading specialists to work with professionals and students to enable all students to meet the appropriate New Jersey Core Curriculum Standards in Language Arts/Literacy.

The course of studies provides students with an understanding of the basic principles of developmental and remedial reading instruction for grades pre-k-12. Students acquire advanced knowledge of the reading process. They engage in hands-on experiences in diagnosing and teaching learners who are having difficulty with literacy acquisition. The program prepares professionals to teach literacy to all learners and serve as leaders in supporting their colleagues in the field.

There are two concentration options in this program. The total number of required credits varies from 30-34 depending upon the concentration selected during the application process.

- **Concentration I:** Reading Practitioner is best intended for those who wish to pursue advanced study in literacy education and become more knowledgeable about instructional strategies in English Language Arts, especially those that align with the Common Core Standards. Students in this track are not required to have teaching certification, but are required to have access to a classroom and/or school district setting as well as a group of children to work with. This concentration does NOT lead to NJ Reading Specialist Certification.
- **Concentration II:** Reading Specialist is best intended for those who hold a current state teaching certificate, have at least two year's full-time teaching experience, and who want to expand their knowledge, skills, and dispositions in teaching literacy and coaching colleagues. Students learn procedures for administering reading programs in elementary and secondary schools. While enrolled in the course Clinical Experiences in Reading, students are required to engage in tutoring at the highly regarded clinic held on Rowan's Glassboro campus. There is an emphasis on reflective practice with colleagues and peer mentoring as part of this experience. This concentration leads to NJ Reading Specialist Certification†.

Program Requirements Concentration I

The Master of Arts in Reading Education: Reading Practitioner is a part-time program offered in an accelerated online format. It requires the completion of 30 graduate semester hours (10 courses), which are possible to complete in only 5 consecutive semesters. Students must successfully complete and present a cumulative digital portfolio.

Required Courses for Concentration I 30 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
READ 30500	Theory & Practice in Literacy Education	3
READ 30515	Teaching Reading and Writing Across the Grades	3
READ 30520	Content Area Literacy	3
READ 30530	Teaching Reading to Students with Disabilities	3
READ 30535	Word Study: Phonics, Spelling & Vocabulary Instruction	3
READ 30545	Using Multicultural Literature in the K-12 Reading & Writing Classroom	3
READ 30547	Teaching Literacy to English Language Learners	3
READ 30552	Teaching Writing in K-12 Classrooms	3

READ 30557	21st Century Literacy: Digital Knowledge, Digital Teaching	3
READ 30610	Literacy Assessment	3
Total Required Credits for the Program		30 s.h.

Program Requirements Concentration II

The Master of Arts in Reading Education: Reading Specialist is a part-time program offered in an accelerated hybrid format with three courses requiring face-to-face meetings on Rowan's Glassboro campus and the remaining courses taking place 100% online. It requires the completion of 34 graduate semester hours (11 courses), which are possible to complete in only 6 consecutive semesters. Students must successfully complete a comprehensive exam and thesis.

- Total semester hours required for program completion: 34 semester hours (s.h.)
- Thesis Requirement: Yes

Required Courses for Concentration II 34 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
READ 30515	Teaching Reading & Writing across the Grades	3
READ 30520	Content Area Literacy	3
READ 30530	Teaching Reading to Students with Disabilities	3
READ 30535	Word Study: Phonics, Spelling & Vocabulary Instruction	3
READ 30540	Administration & Supervision of School Reading Programs	3
READ 30545	Using Multicultural Literature in the K-12 Reading & Writing Classroom	3
READ 30550	Diagnosis of Remedial Reading Problems	3
READ 30560	Correction of Remedial Reading Problems	3
READ 30570	Clinical Experiences in Reading	6
READ 30599	Reading Research Seminar I	1
READ 30600	Reading Research Seminar II	3
Total Required Credits for the Program		34 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and/or Thesis Requirements

- Students selecting Concentration I must successfully complete and present a cumulative digital portfolio.
- Students selecting Concentration II must successfully complete a comprehensive exam and defend a Master's Thesis.

Minimum Required Grades and Cumulative GPA

The Master of Arts in Reading Education is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information

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Xiufang Chen
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Master of Arts in STEM Education (M.A. STEM)

The need for teachers in high-need disciplines continues to grow. This program addresses these needs by selecting exceptionally able college seniors and career changers with science, technology, engineering, or mathematics backgrounds from across the country and supporting them to develop successful careers as highly skilled math, science, and technology teachers.

The Master of Arts in STEM Education (M.A. STEM) offers the unique opportunity for students who have undergraduate degrees in the mathematics, engineering, or the sciences to pursue an initial New Jersey teaching certificate in mathematics and/or one of the sciences† and a master's degree simultaneously.

This program is carefully designed such that all coursework has a STEM (Science, Technology, Engineering, Mathematics) focus that provides the ideal pedagogical preparation for prospective Mathematics or Science teachers in the P-12 setting. This 13-month program includes an early field experience, face-to-face, online, and hybrid courses, and a year-long teacher residency. The culminating experience is a seminar in which students transition from teacher candidate to teacher by planning for leading their own classrooms.

Concentrations within the Master of Arts in STEM Education:

- Mathematics
- Science

Program Requirements

Required Courses 24 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
STEM 60501	STEM: Teaching & Research Methods I	3
STEM 60510	Teaching STEM in Diverse Settings	3
READ 30520	Content Area Literacy	3
STEM 60504	Professional Seminar for STEM Education	3
STEM 60512	STEM Clinical Practice I	1
STEM 60513	STEM Clinical Practice II	3
SELN 60576	Inclusive Instruction in STEM Classrooms	3
SMED 60550	Schools and Society: Foundations for Secondary Teaching	3
STEM 60524	STEM Teaching & Research Clinical Seminar I	1
STEM 60525	STEM Teaching & Research Clinical Seminar II	1

Concentration Courses 9 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
Mathematics Concentration Courses		
STEM 60502	STEM Teaching & Research Methods II: Mathematics	4
STEM 60503	STEM Teaching & Research Methods III: Mathematics	5
Science Concentration Courses		
STEM 60522	STEM Teaching & Research Methods II: Science	4
STEM 60523	STEM Teaching & Research Methods III: Science	5

Total Required Credits for the Program 33 s.h.

Foundation Courses

- Students in this program are required to meet admission course requirements in either P-12 Biology, Chemistry, Mathematics, Physical Science, Earth Science, or Physics NJ state certification subject areas. Please consult Academic Advisor for information.
- One course in each of the following areas: Adolescent Development, Educational Psychology, Health and Wellness or Biology or Nutrition

Graduation/Exit/Thesis Requirements

Exit Portfolio required.

Minimum Required Grades and Cumulative GPA

The Master of Arts in STEM Education is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
Issam Abi-El-Mona
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Master of Arts in School Administration (M.A.)

The Master of Arts in School Administration program provides the candidate with the opportunity to learn the diagnostic and prescriptive skills necessary to function as a collaborative leader in a P-12 learning organization. The program meets the requirements established by the New Jersey Department of Education for state certification as a public school administrator in positions such as assistant superintendent for curriculum and instruction, principal, assistant principal, vice principal, and supervisor†. In order for candidates to qualify for the Certificate of Eligibility (C.E.) for the principal endorsement, they must achieve a satisfactory score on the School Leaders Licensure Assessment.

Program Requirements

Required Courses 36 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
EDSU 28510	Curriculum Design & Development for Instructional Leaders	3
CURR 29590	Curriculum Evaluation	3
EDAM 27510	Change for School Improvement	3
EDAM 27521	Introduction to the Principalship	3
EDAM 27535	School Finance & Records	3
EDAM 27559	Law & Ethics for School Leadership	3
EDAM 27600	Practicum/Seminar I in Administration & Supervision	3
EDAM 27601	Practicum/Seminar II in Administration & Supervision	3
EDST 24504	Action Research in Education	3
EDSU 28522	Instructional Leadership & Supervision	3
EDSU 28523	Building Organizational Capacity	3
EDSU 28546	Educational Organizations & Leadership	3

Total Required Credits for the Program 36 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and/or Thesis Requirements

Benchmarks: *Successful completion of all benchmarks is required for continuation in and graduation from the program. Details regarding benchmarks timing and assessments will be shared with the student throughout the program by the Academic Advisor.*

Benchmark I:

- *Timing*: Occurs after the completion of 12 prescribed credits (Phase I)
- *Requirements*: Candidates must successfully complete all Phase I courses and begin collecting a sample of course products from Phase I courses that demonstrate formative or developing achievement of appropriate NELP/PSEL standards. Discuss details with Academic Advisor.
- *Options*: If the student does not successfully pass the benchmark, then the student is invited to re-take any necessary coursework.

Benchmark II:

- *Timing*: Occurs after the completion of 30 prescribed credits (Phase II)
- *Recommendations*: Candidates may take the School Leader Licensure Assessment and have an approved tentative plan for the Practicum and Seminar in Administration and Supervision courses (internship). Discuss details with the Academic Advisor.
- *Options*: If the student does not successfully pass the benchmark, then the student is able to re-take Assessment Exam or any incomplete coursework, until such time as benchmark is passed or student is made inactive.

Minimum Required Grades and Cumulative GPA

The Master of Arts in School Administration is a Category 1 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator Contact Information
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Program Advisor Contact Information
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Master of Arts in School Psychology (M.A.)

Completion of the Master of Arts (M.A.) in School Psychology provides a background in the theories, major knowledge, and methodological procedures in school psychology. This program (or its equivalent) is required for admission into the Educational Specialist (Ed.S.) program. The Master of Arts and Educational Specialist in School Psychology combine to meet the requirements for NJ Department of Education certification in School Psychology†.

Program Requirements

Required Courses 33 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
COUN 26509	Group Counseling in Educational Settings	3
COUN 26526	Individual Counseling Procedures	3
LDTC 18520	Neurological Bases of Educational Disorders	3
PSY 01570	Research Methodology and Statistics in Counseling Psych	3
PSY 03624	Psychopathology of Childhood & Adolescence	3
PSY 05610	Social and Cultural Diversity	3
or COUN 26525	Multicultural Counseling	
PSY 06533	Test & Measurements	3
PSY 22507	Development and Learning	3
or PSY 09560	Lifespan Development	
PSY 22600	Seminar I in Applied Research: School Psychology	3
or SPSY 22600	Applied Research Seminar I: School Psychology	
PSY 22601	Seminar II in Applied Research: School Psychology	3
or SPSY 22601	Applied Research Seminar II: School Psychology	
SPED 08555	Educational Psychology of the Exceptional Learner	3

Total Required Credits for the Program 33 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and/or Thesis Requirements

- Successful completion of comprehensive exam (no thesis required)

Minimum Required Grades and Cumulative GPA

The Master of Arts in School Psychology is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
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Master of Arts in Special Education (M.A.)

This advanced program is designed for individuals who possess an instructional certificate and want to pursue a Master of Arts in Special Education. Students must be employed full-time in a P-12 class setting to complete field-related assignments throughout this program. The purpose of the program is to provide advanced studies focusing on the educational, psychological, and sociological needs of children and youth with disabilities. The course work and related field experiences are designed to foster an understanding of students with a range of suspected and diagnosed disabilities combined with pedagogical skills to support individual strengths and needs and provide appropriate curriculum accommodations and modifications when necessary. Upon completing the program, candidates earn a Master of Arts in Special Education.

Track Information

All students in this MA in Special Education must successfully complete six core courses. In addition, each student must select from and successfully complete course work in one of four track options in this program. The total number of required credits varies from 30-36 depending upon the track selected during the application process.

- **Track I: Graduate Endorsement** is designed for those who wish to qualify for State of New Jersey Teacher of Students with Disabilities Certification while simultaneously earning their Master's degree†. *This is the only track that leads to a state-approved Special Education certification.*
- ***Track II: Autism Spectrum Disorders*** is designed for those who are already licensed to teach Special Education, but are interested in working with students with significant disabilities, especially autism spectrum disorders. *This track is for advanced content knowledge only and does not lead to any certification or endorsement.* **(*Program is not currently accepting new applicants for the Autism Spectrum Disorders track.)**
- **Track III: Learning Disabilities** is designed for teachers who are looking to broaden their knowledge and skills to better serve students with exceptional learning needs. *This track is for advanced content knowledge only and does not lead to any certification or endorsement.*
- **Track IV: Early Childhood Special Education** is designed for education professionals who are looking to broaden their knowledge and skills to better serve young children at risk for and with diagnosed disabilities and their families across diverse birth - five (5) settings. *This track is for advanced content knowledge only and does not lead to any certification or endorsement.*

Program Requirements

Core Required Courses 18 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
ECSE 10500	Characteristics of Young Children with Disabilities (birth-5) and their Families	3
SELN 10578	Special Education Policy, Advocacy, and Teacher Leadership	3
SELN 10582	Communication Skills for Students with Disabilities	3
SELN 10585	Educational Assessment in Special Education	3
SELN 10610	Inquiry in Special Education Settings (Capstone I must be taken towards the end of the program in the same semester as SELN 10611)	3
SELN 10611	Practicum: Inquiry in Special Education Settings (Capstone II must be taken towards the end of the program in the same semester as SELN 10610)	3

Graduate Endorsement Track 18 s.h.

Course #	Course Title	S.H.
READ 30530	Teaching Reading to Students with Disabilities	3
SELN 10581	Implementing Positive Behavior Support	3
SELN 10585	Educational Assessment in Special Education (MA core course)	3
SELN 10592*	Clinical Seminar in Special Education (take in the same module with SPED 08520)	1
SPED 08515	Curriculum, Instruction & Transition in Special Education	3
SPED 08520*	Clinical Experiences in Special Education (take in the same module with SELN 10592)	2
SPED 08540	Technology for Students with Disabilities	3
SPED 08555	Education and Psychology of Students with Disabilities(first course in track)	3

** Taken concurrently after successful completion of all Graduate Endorsement track courses.*

Note: Students must complete an application 4-6 months in advance on TK20 for SPED 08520 (Application deadlines: 9/1 for Spring term; 1/1 for Summer term; 2/15 for Fall term).

Autism Spectrum Disorders Track (Not available in 2022-2023)		12 s.h.
Course #	**Course Title**	**S.H.**
PSY 02520	Assessments & Interventions for Social Skills & Relationships in Children	3
PSY 02600	ABC's of Applied Behavior Analysis	3
SELN 10582	Communication Skills for Students with Disabilities (MA core course)	3
SELN 10590	Introduction to Autism Spectrum Disorders	3
SELN 10591	Instructional Methods for Students with Autism Spectrum Disorders	3

Learning Disabilities Track		15 s.h.
Course #	**Course Title**	**S.H.**
LDTC 18510	Applied Learning Theories	3
LDTC 18503	Foundations of Learning Disabilities	3
LDTC 18520	Neurological Basis of Educational Disorders	3
READ 30530	Teaching Reading to Students with Disabilities	3
SPED 08555	Education and Psychology of Students with Disabilities	3

Early Childhood Special Education Track		12 s.h.
Course #	**Course Title**	**S.H.**
ECSE 10500	Characteristics of Young Children with Disabilities (birth - five) and their Families (prerequisite in track; MA core course)	3
ECSE 10501	Methods for Assessing and Teaching Infants and Toddlers with Disabilities	3
ECSE 10502	Methods for Assessing and Teaching Preschool Children (3-5) with Disabilities	3
ECSE 10503	Supporting Diverse Families, Community Partnerships, and Transitions	3
ECSE 10504**	Self Study Project Inquiry in Early Childhood Special Education	3

***Students may enroll in ECSE 10504 after successful completion of Early Childhood Special Education Track courses (ECSE 10500, ECSE 10501, ECSE 10502, and ECSE 10503).*

Total Required Credits for the Program	30-36 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and/or Thesis Requirements

Students must successfully complete all required courses including the two-course capstone.

Minimum Required Grades and Cumulative GPA

The Master of Arts in Special Education is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
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Herman D. James Hall
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Master of Arts in Urban Education and Community Studies (M.A.)

The Master of Arts in Urban Education and Community Studies (UECS) is intended to prepare urban educators, community organizers, policymakers, school leaders, and youth-focused change agents to understand the contradictions of current urban school systems and meaningfully address the educational and broader socioeconomic disparities that urban communities too often face. The program meets its primary objective through a focus on students understanding and applying a range of critical perspectives to study urban education and communities including from historical, legal, sociological, and political economic lenses. There are no certifications attached to the program. The program culminates in a master's degree.

There are two possible pathways through our MA in Urban Education and Community Studies, Curriculum & Pedagogy and a certificate in English as a Second Language plus the M.A. in Urban Education and Community Studies options. Those interested in receiving ESL certification first complete their certification, then add core M.A. courses to complete their degree. As a result, those who wish to pursue an ESL certificate + M.A. in UECS option must first be accepted by both programs.

Program Requirements

Required Courses 12 s.h.

Students must choose 12 s.h. from the bank of courses.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
CASE 90510	Power and Privilege: The Social Construction of Difference	3
CASE 90511	Sociology of Education: Political Economy of Urban Education and Environments **(Not offered in 2022-2023)**	3
CASE 90512	Examining Intersectionality: Critical Theories of Race, Class, Gender, Sexuality, and Citizenship	3
CASE 90513	History of Urban Education and Communities	3
CASE 90514	Education Reform in the US: Theories of Change	3

Curriculum & Pedagogy Concentration Courses 12 s.h.

Students must choose 12 s.h. from the bank of courses.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
CASE 90530	Curriculum Theories in Urban Education	3
CASE 90531	Critical Consciousness: Sharing Power and Voice with Students	3
CASE 90532	Working with Families and Communities	3
CASE 90533	Critical Pedagogy	3
CASE 90534	Disability Studies **(Not offered in 2022-2023)**	3
CASE 90535	Issues of Language and Cultural Diversity in ESL/Bilingual Programs **(Not offered in 2022-2023)**	3

English as a Second Language Concentration Courses with Certification 12 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
BLED 40510	Issues of Language and Cultural Diversity in ESL/Bilingual Programs	3
BLED 40512	Linguistics and Second Language Acquisition for Teaching Languages	3
BLED 40515	Language, Culture and Communications	3
BLED 40520	Planning, Teaching and Assessment in ESL Classrooms	3
BLED 40522	Integrating Language and Content in ESL/Bilingual Education	3
BLED 40523	Practicum in Teaching English as a Second Language	1

Elective Courses 6 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
CASE 90550	Urban Education and Community Studies Special Topics	3
CASE 90551	Artistic Expression in Action: Building Stronger Communities through Fine Arts Outreach	3

Research Courses 6 s.h.

Students must choose 6 s.h. from the bank of courses.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
CASE 90520	Participatory Research Methods in Contexts	3

CASE 90521	Ethnography in Urban Settings	3
CASE 90522	Urban Quantitative Methods **(Not offered in 2022-2023)**	3
CASE 90523	Urban Qualitative Methods	3

Thesis Courses 3 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
CASE 90524	Thesis Capstone Project: M.A. in Urban Education and Community Studies	3

Total Required Credits for the Program 36 - 40 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and/or Thesis Requirements

Satisfy all course requirements as dictated by the academic department. Earn an official cumulative GPA of 3.0 on Rowan's 4.0 scale. Satisfy program exit project as outlined by the academic department. Any other requirements for graduation from Rowan University.

Minimum Required Grades and Cumulative GPA

The Master of Arts in Urban Education and Community Studies is a Category 1 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information

Walter Gershon, Ph.D.
Herman D. James Hall
856.256.4798
gershon@rowan.edu

Master of Education in Teacher Leadership (M.Ed.)

The Master of Education in Teacher Leadership is a graduate program of Rowan University's CAEP accredited College of Education. It is designed for teachers who want to develop and hone their leadership skills but wish to remain in the classroom. The program approaches leadership from the perspectives of exemplary teaching, continuous learning for all, a need to balance change with stability, and the importance of peaceful existence in a diverse community of learners. To that end, teachers will enhance their abilities to lead not only in their classrooms, but also in the school at large by working with curriculum, becoming mentor/master teachers, developing new programs, and through a variety of other activities that improve schooling for all children.

The Master of Education degree program has three goals:

1. To develop teacher leaders who practice teaching skills aligned with the New Jersey State Teacher Model Standards.
2. To develop teacher expertise in a content area of choice.
3. To empower teachers to assume leadership roles within their schools and districts.

The following seven core propositions of the New Jersey State Teacher Model Standards provide the focus for the master's program in Standards-Based Practice:

- Fostering a Collaborative Culture to Support Educator Development and Student Learning
- Accessing and Using Research to Improve Practice and Student Learning
- Promoting Professional Learning for Continuous Improvement
- Facilitating Improvements in Instruction and Student Learning
- Promoting the Use of Assessments and Data for School and District Improvement
- Improving Outreach and Collaboration with Families and Community
- Advocating for Student Learning and the Profession

The M.Ed. in Teacher Leadership is a part-time program with its core courses offered in an online accelerated format. The degree requires the completion of a minimum of 30 graduate semester hours (s.h.) in six (6) consecutive semesters. **Due to its scaffolding design, transfer credits are not accepted in the M.Ed. in Teacher Leadership program.**

The following three components make up the M.Ed. in Teacher Leadership program:

- Seven Core Courses in Teacher Leadership (19 semester hours)
- Content Area COGS Coursework (11-21 semester hours)
- Elective Course: Teacher Leadership Capstone (1 semester hour)

The seven core courses for this program are offered completely online. The approved Content Area Certificates of Graduate Study (COGS) are offered in varying formats depending on the COGS (e.g., online, hybrid, face-to-face Glassboro Campus, face-to-face Camden Campus).

Content Certificate of Graduate Study (COGS) Options

Following are the currently accepted Content area COGS for the Master of Education in Teacher Leadership program. Advisement for each of those COGS is managed by the department in which it is housed.

- Early Childhood Special Education (Interdisciplinary & Inclusive Education, Online)
- Educational Technology (STEAM Education, Online)
- ESL/Bilingual (Language, Literacy & Sociocultural Education, Online)
- Global History (History, Glassboro Campus)
- History (History, Glassboro Campus)
- Holocaust and Genocide Education (Sociology & Anthropology, Glassboro Campus)
- Learning Disabilities (Interdisciplinary & Inclusive Education, Online and Glassboro Campus)
- Reading (Language, Literacy & Sociocultural Education, Glassboro Campus)
- Reading/Writing (Language, Literacy & Sociocultural Education, Glassboro Campus)
- School Public Relations (Public Relations & Advertising, Glassboro Campus)
- Special Education (Interdisciplinary & Inclusive Education, Online and Glassboro Campus)

Program Requirements

Required Courses (Teacher Leadership Core/Teacher Leadership COGS courses) 19 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
METL 50512	Curriculum Development for Teacher Leaders and Other School Professionals	3
METL 50514	Agency in Teacher Leadership	3
METL 50511	Teacher Leadership and Learning Communities	3
METL 50516	Analysis of Classroom Teacher Behaviors	3
METL 01624	Educational Change	3
METL 50513	Teacher Leadership in Practice	3
METL 50550	Self-Study Research in Teacher Leadership	1

If students hold National Board certification, two courses in the Core/Teacher Leadership COGS will be waived.

Required Content Area COGS Courses 11-21 s.h.

Choose one (1) of the Content Area COGS options listed and follow the course requirements as listed in this catalog.

Content Area COGS	S.H.
Early Childhood Special Education	15
Educational Technology	15
English as a Second Language	16-21
Global History	15
History	15
Holocaust and Genocide Education	12
Learning Disabilities	15
Reading	15
Reading/Writing	15
School Public Relations*	9
Special Education	18

*Students that select the COGS in School Public Relations will be required to complete an additional two or three credit course to meet the 30 total required credits for the program. Please contact the program coordinator for additional information.

Total Minimum Required Credits for the Program 30 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and/or Thesis Requirements

Self-Study in Teacher Leadership Course - This mandatory Self-Study course must be completed successfully to be eligible to graduate. Successful completion of the COGS coursework is a requirement prior to registering for the Self-Study in Teacher Leadership Course.

For additional details, please consult the Program Coordinator and your appropriate COGS coordinator.

Minimum Required Grades and Cumulative GPA

The Master of Education in Teacher Leadership is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
John J. Quinesso, Jr.
Department of Interdisciplinary and Inclusive Education
Herman D. James Hall
856.256.4500, ext.53814
quinesso@rowan.edu

Master of Science in Teaching in Subject Matter Education (M.S.T.)

The Master of Science in Teaching (M.S.T.) in Subject-Matter (P-12) Education program offers the unique opportunity for students to pursue an initial New Jersey teaching certificate† and a Master's degree simultaneously. The program is designed to prepare individuals who have undergraduate degrees to be certified as subject-matter (P-12) teachers. Students whose undergraduate degree is in a professional or technical area may need to take as many as 30 additional credits in the desired content discipline necessary to meet certification requirements before being accepted into the program. Questions about appropriate undergraduate majors, academic sequences or prerequisites should be directed to the program coordinator. The subject-matter program is designed for prospective social studies, English, or Spanish teachers. The Master of Science in Teaching program is a one year (May to May), full-time program. The program cycle includes three consecutive terms beginning with a summer term and concluding after the spring term.

Subject Matter Focus Areas

The following focus areas are available in the Subject Matter Education program. (Candidates will officially declare their focus area at the time of application.):

- P-12 English
- P-12 Foreign Language
- P-12 Social Studies

There is also an option for Subject Matter Education – Theatre Education, which has its own catalog entry in this section.

Program Requirements

Required Courses 33 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
SMED 60550	Schools & Society: Foundations for Secondary Teaching	3
SMED 60552	Teaching Content in Diverse Classrooms	3
SMED 60553	Creating Supportive Middle and High School Learning Environments	3
SMED 60562	Clinical Practice I (Fall Field Placement)	3
SMED 60560	Curriculum, Instruction, and Assessment 1	3
READ 30520	Content Area Literacy (for English, Social Studies, and Theatre students)	3
or BLED 40512	Linguistic and Second Language Acquisition (Spanish students only)	
SELN 60577	Effective Inclusive Instruction in English, Social Studies, Theatre, and World Language Classrooms	3
SMED 60561	Curriculum, Instruction, and Assessment II	3
SMED 60563	Clinical Practice II (Spring Field Placement)	9

Total Required Credits for the Program 33 s.h.

Foundation Courses

For a list of prerequisite courses for each focus area, please contact the Program Coordinator.

Graduation/Exit, Benchmark, and/or Thesis Requirements

No thesis is required. Contact the Program Coordinator for graduation/exit and benchmark requirements.

Minimum Required Grades and Cumulative GPA

The Master of Science in Teaching in Subject Matter Education is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information

Ray Foley, Ed.D.
Herman D. James Hall
302.383.1144
foleyr@rowan.edu

Master of Science in Teaching in Subject Matter Education – Theatre Education (M.S.T.)

The Master of Science in Teaching (M.S.T.) in Theatre Education program offers students the unique opportunity to pursue an initial New Jersey teaching certificate† and a Master's degree simultaneously. The program is designed to prepare individuals who have undergraduate degrees to be certified P-12 Theatre teachers. Students whose undergraduate degree is in a professional or technical area may need to take as many as 30 additional credits in the desired content discipline necessary to meet certification requirements before being accepted into the program. Questions about appropriate undergraduate majors, academic sequences or prerequisites should be directed to the program coordinator. The Theatre Education program is designed for those with undergraduate theatre degrees who wish to teach theatre in P-12 classrooms. The Master of Science in Teaching program is a one year (May to May), full-time program. The program cycle includes three consecutive terms beginning with a summer term and concluding after the spring term.

Program Requirements

The Rowan University Master of Science in Teaching (M.S.T.) Theatre Education program requires the completion of 33 semester hours (s.h.) on the Glassboro or Camden, NJ campus.

- Total semester hours required for program completion: 33 s.h.
- Thesis Requirement: No

Required Courses 33 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
SMED 60550	Schools & Society: Foundations for Secondary Teaching	3
SMED 60552	Teaching Content in Diverse Classrooms	3
SMED 60553	Creating Supportive Middle and High School Learning Environments	3
SMED 60562	Clinical Practice I (Fall Field Placement)	3
SMED 60560	Curriculum, Instruction, and Assessment I	3
READ 30520	Content Area Literacy (for English, Social Studies, and Theatre students)	3
SELN 60577	Effective Inclusive Instruction in English, Social Studies, Theatre, and World Language Classrooms	3
SMED 60561	Curriculum, Instruction, and Assessment II	3
SMED 60563	Clinical Practice II (Spring Field Placement)	9

Total Required Credits for the Program 33 s.h.

Foundation Courses

For a list of prerequisite courses for each focus area, please contact the Program Coordinator.

Graduation/Exit, Benchmark, and/or Thesis Requirements

No thesis is required. Contact the Program Coordinator for graduation/exit and benchmark requirements.

Minimum Required Grades and Cumulative GPA

The Master of Science in Teaching in Subject Matter Education - Theatre Education is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
Ray Foley, Ed.D.
Herman D. James Hall
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foleyr@rowan.edu

Certificates of Advanced Graduate Study (Non-degree)

Certificate of Advanced Graduate Study in Principal Preparation (CAGS)

The Certificate of Advanced Graduate Study (CAGS) in Principal Preparation program meets the requirements specified by the New Jersey Department of Education for state certification†, including a 300 hour internship and is designed to serve the person who has already earned a master's degree, has five years of full-time experience, and who wants to qualify as a principal in the public schools.

Program Requirements

Required Courses 24 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
EDAM 27510	Change for School Improvement	3
EDAM 27521	Introduction to the Principalship	3
EDAM 27535	School Finance & Records	3
EDAM 27559	Law & Ethics for School Leadership	3
EDAM 27600	Practicum/Seminar I in Administration & Supervision	3
EDAM 27601	Practicum/Seminar II in Administration & Supervision	3
EDSU 28522	Instructional Leadership & Supervision	3
EDSU 28523	Building Organizational Capacity	3

Total Required Credits for the Program 24 s.h.

Foundation Courses

- The program allows students to transfer 12 credits into the program provided that a grade of "B" or better was earned.
- If students cannot transfer 12 credits, they can register for courses from the M.A. in School Administration program to reach the required 36 credits.

Graduation/Exit, Benchmark, and/or Thesis Requirements

Benchmarks: *Successful completion of all benchmarks is required for continuation in and graduation from the program. Details regarding benchmarks' timing and assessments will be shared with the student throughout the program by the Academic Advisor.*

Benchmark I:

- *Timing*: Occurs after the completion of 12 prescribed credits
- *Requirements*: Candidates must achieve a passing score on the School Leader Licensure Assessment and have an approved tentative plan for the Practicum and Seminar in Administration and Supervision courses (internship). Discuss details with the Academic Advisor.
- *Options*: If the student does not successfully pass the benchmark, then the student is able to re-take Assessment Exam or any incomplete coursework, until such time as benchmark is passed or student is made inactive.

Minimum Required Grades and Cumulative GPA

The Certificate of Advanced Graduate Study in Principal Preparation is a Category 1 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator Contact Information
David T. Lindenmuth, Ed.D.
Herman D. James Hall
856.256.4705
lindenmuth@rowan.edu

Program Advisor Contact Information
Miguel Greenup
Herman D. James Hall
856.256.4500, ext.53637
greenup@rowan.edu

Certificate of Advanced Graduate Study in Student Assistance Coordination (CAGS)

The Certificate of Advanced Graduate Study (CAGS) in Student Assistance Coordination is intended for individuals who want to be certified as student assistance coordinators. A Student Assistance Coordinator provides in-school assessment, crisis intervention, and counseling and referral services to any student experiencing personal, family, or peer difficulties. Student Assistance Coordinator's work with students, their families, and community resources in many New Jersey school districts to address substance abuse issues, social and emotional issues, and behavioral problems experienced by school-age children.

The certificate may be earned on its own or it can be credited towards the Master of Arts in Counseling Educational Settings. Master of Arts in Counseling in Educational Settings students interested in obtaining the certificate are encouraged to contact the program coordinator for additional information.

Program Requirements

Required Courses 24 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
COUN 26523	Counseling Interviewing Skills and Techniques	3
PSY 05502	Fundamentals of Drug and Alcohol Abuse and Dependency	3
PSY 09512	Developmental Psychology of Drug and Alcohol Abuse	3
COUN 26520	Design & Coordination of Developmental Counseling Programs	3
PSY 03518	Psychological Evaluation and Counseling Services to Combat Alcohol and Drug Abuse	3
EDAM 27559	Law and Ethics School Leadership	3
COUN 26597	Intervention and Referral Services/School Teams and Community Resources	3
COUN 26527	Practicum in Counseling in Educational Settings	3

Total Required Credits for the Program 24 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and/or Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The CAGS in Student Assistance Coordination is a Category 1 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
Dr. Zalphia Wilson-Hill
Herman D. James Hall
wilson-hill@rowan.edu

Certificate of Advanced Graduate Study in Supporting Mental Health and Social Emotional Learning in Educational Settings (CAGS)

The Certificate of Advanced Graduate Study (CAGS) in Student Assistance Coordination is designed to educate, provide awareness, and give specific academic and social emotional strategies that educators and professionals can implement and assist in helping all students succeed.

Program Requirements

Required Courses 12 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
COUN 26650	Mental Health Awareness and (Emotional) Crisis Management in Educational Settings	3

COUN 26651	Trauma Informed Practices for Social Emotional Development in Educational Settings	3
COUN 26652	Neurodiverse Learning and Social Emotional Development in Educational Settings	3
COUN 26653	Promoting Self-Care and Wellness in Educational and Professional Settings	3
Total Required Credits for the Program		12 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and/or Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The CAGS in Supporting Mental Health and Social Emotional Learning in Educational Settings is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information

Kara Ieva
Herman D. James Hall
856.256.4305
ieva@rowan.edu

Certificates of Graduate Study (Non-degree)

Certificate of Graduate Study in Adapted Physical Activity (COGS)

The Certificate of Graduate Study in Adapted Physical Activity is a 12-credit program that academically and experientially prepare students to be eligible for national certification exams across three professional bodies. Coursework emphasizes mastery of content knowledge specific to Adapted Physical Education National Standards (APENS); American College of Sports Medicine/ National Center on Health, Physical Activity and Disability Inclusive Fitness Trainer standards; and Blaze Sports Adaptive Recreation & Sports Specialist standards.

Program Requirements

- Total semester hours required graduate work for program completion: 12 semester hours (s. h.)

Required Courses 12 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
HPE 00552	Curriculum & Assessment in Adapted Physical Activity	3
HPE 00553	Community-Based Adapted Physical Activity	3
HPE 00554	Pathology of Disability for the Adapted Physical Activity Specialist	3
CASE 90534	Disability Studies	3
Total Required Credits for the Program		12 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and/or Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The Certificate of Graduate Study in Adapted Physical Activity is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information

Maria Lepore-Stevens
Herman D. James Hall
leporestevens@rowan.edu

Certificate of Graduate Study in Early Childhood Coaching and Technical Assistance (COGS)

Specific program objectives are: 1) Develop graduates with theoretical, policy and research, and practical knowledge base in early childhood technical assistance and leadership, 2) Develop graduates with strong knowledge base in critical perspectives in coaching and technical assistance in early childhood education and 3) Develop graduates with the knowledge and skills necessary to guide continuous quality improvement and to advocate for early childhood communities in larger contexts.

Program Requirements

Required Courses 15 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
ECED 23521	Continuous Quality Improvement in Early Childhood: Research and Policy	3
ECED 23522	Critical Perspectives on Coaching and Mentoring in Diverse Early Childhood Settings	3
ECED 23523	Access and Equity: Culturally Responsive Practices in Technical Assistance	3
ECED 23524	Implementation Science and Quality Improvement Initiatives	3
ECED 23526	Developing Expertise as an Agent of Change within Early Childhood Systems	3

Total Required Credits for the Program 15 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and/or Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The Certificate of Graduate Study in Early Childhood Coaching and Technical Assistance is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information

Jennifer Cortes
Herman D. James Hall
cortesj@rowan.edu

Certificate of Graduate Study in Early Childhood Education (COGS)

The Certificate of Graduate Study program is a graduate-level certificate program offered to teachers to strengthen and deepen their knowledge and skills in Early Childhood Education, focusing on P-3 grade level†.

Program Requirements

Required Courses

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
ECED 23511	Supporting Social/Emotional Development of Young Children	3
ECED 23512	Exploring the World: Literacy, Social Studies & Creative Experience in Early Childhood	3
ECED 23513	Assessment in Early Childhood Education	3
ECED 23514	Family, Community, and Professional Ethics	3
ECED 23515	Young Scientists: Science, Technology, Engineering, and Math Experiences in Early Childhood	3

Total Required Credits for the Program 15 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and/or Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The Certificate of Graduate Study in Early Childhood Education is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information

Zeynep Ercan
3043 Herman D. James Hall
856.256.4500, ext.3806
ercan@rowan.edu

Certificate of Graduate Study in Early Childhood Special Education (COGS)

The Certificate of Graduate Study (COGS) in Early Childhood Special Education is designed for education professionals to enhance their knowledge and skills in early childhood special education, expand their employment opportunities, and increase services to young children with disabilities and their families.

The program is ideal for early intervention therapists and instructors, professionals with diverse backgrounds who currently work in early childhood special education settings, and family members who may want additional expertise or training in this area of study.

Students are prepared to support infants and toddlers in home-based and/or center-based Early Intervention, preschoolers (3-5) in preschool special education, and children with suspected but not yet diagnosed delays or disabilities across various birth- five (5) settings.

This program will not lead to certification*. Teachers in the state of New Jersey may apply to the Certificate of Graduate Study in Early Childhood Special Education program through the New Jersey Teacher Outreach Program (NJTOP®).

* All courses in this COGS may be applied as an approved track/specialization within the MA in Special Education (note: separate eligibility and application process for the MA will apply).

Program Requirements

Required Courses 15 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
ECSE 10500**	Characteristics of Young Children with Disabilities (birth - five) and their Families	3
ECSE 10501	Methods for Assessing and Teaching Infants and Toddlers with Disabilities	3
ECSE 10502	Methods for Assessing and Teaching Preschool Children (3-5) with Disabilities	3
ECSE 10503	Supporting Diverse Families, Community Partnerships, and Transitions	3
ECSE 10504***	Self Study Project Inquiry in Early Childhood Special Education	3

***ECSE 10500 is the prerequisite for ECSE 10501, ECSE 10502, ECSE 10503, and ECSE 10504.*

****Students may enroll in ECSE 10504 after successful completion of ECSE 10500, ECSE 10501, ECSE 10502, and ECSE 10503.*

Total Required Credits for the Program 15 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and/or Thesis Requirements

ECSE 10504: Self Study Project Inquiry in Early Childhood Special Education

This course provides a culminating capstone experience for graduate students enrolled in the Early Childhood Special Education Certificate of Graduate Study (ECSE COGS). Students will work closely with a faculty member to self-select a timely area of inquiry in the ECSE field that directly or indirectly impacts inter-disciplinary professionals, families, and/or young children with suspected or diagnosed disabilities across diverse birth-five settings. This self-study will result in the production of a literature review, a service project/outreach initiative, and formal information-sharing/presentation with relevant stakeholders. Students will incorporate one or more theoretical frameworks and content from each of the ECSE COGS courses and will be evaluated on rubrics that assess both content and quality.

Students must maintain a "B" average across all ECSE COGS coursework and high ratings on devised disposition checklists from supervising site director and/or lead teacher during each course where field assignments are completed.

Minimum Required Grades and Cumulative GPA

The Certificate of Graduate Study in Early Childhood Special Education is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
Nicole M. Edwards, Ph.D.
Herman D. James Hall
856.256.4500, ext.53797
edwardsn@rowan.edu

Certificate of Graduate Study in Early Childhood STEM Education (COGS)

The Certificate of Graduate Study in Early Childhood STEM Education is designed to prepare early childhood educators to understand STEM content and to meaningfully address the issues and demands of science, technology, engineering, and math in early childhood contexts. The program will provide early childhood educators with the necessary knowledge and skills to advance change within school and community-based contexts.

Program Requirements

Required Courses		15 s.h.
(s.h.: semester hours/credit hours)		
Course #	**Course Title**	**S.H.**
ECED 23531	Equity and Social Justice in Early Childhood STEM Education	3
ECED 23532	Math, Engineering and Technology in Early Childhood	3
ECED 23533	Experimenting with Art and Matter in Early Childhood	3
ECED 23534	Environment and Nature in the Early Years	3
ECED 23535	Inquiry for Early Childhood Educators	3
Total Required Credits for the Program		15 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and/or Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The Certificate of Graduate Study in Early Childhood STEM Education is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
Zeynep Ercan
3043 Herman D. James Hall
856.256.4500, ext.3806
ercan@rowan.edu

Certificate of Graduate Study in Educational Technology (COGS)

The Certificate of Graduate Study in Educational Technology aims to provide educators with the knowledge and proficiencies needed to incorporate existing and emerging educational technologies into their classroom. Individuals completing this program will not only be skilled in the use of computers in the classroom, they will be prepared to assume leadership roles in educational technology in preschool to twelfth grades.

Program Requirements

The Educational Technology Certificate of Graduate Study is a part-time program offered in an accelerated online format. It requires the completion of 15 graduate semester hours (5 courses) in 2.5 consecutive semesters. The courses that make up the Educational Technology Certificate of Graduate Study also serve as content area courses for the Master of Education (M.Ed.) in Teacher Leadership program. Therefore, the semester hours earned in the Certificate of Graduate Study are applicable to the Master of Education Degree requirements. In order to be admitted to the Master of Education Degree program, students must submit a separate application.

Required Courses 15 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
EDTC 33510	Emerging Technology Tools and the Curriculum	3
EDTC 33580	Introduction to Educational Technology	3
EDTC 33584	Digital Citizenship in 21st Century Schools	3
EDTC 33585	Internet in the Classroom	3
SPED 08540	Technology for Students with Disabilities	3

Total Required Credits for the Program 15 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and/or Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The Certificate of Graduate Study in Educational Technology is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information

Yu-Chun Kuo, Ph.D.
Herman D. James Hall
856.256.4500, ext.53825
kuo@rowan.edu

Certificate of Graduate Study in English as a Second Language (COGS)

There is a critical need for highly qualified teachers trained to work with the growing numbers of English language learners in United States schools. This program is open to candidates who possess NJ standard or CEAS instructional certification in other areas, as well as to alternate route candidates who are eligible for NJ instructional certification and have already completed their clinical practicum. The program is approved by the New Jersey State Department of Education†.

Specific program objectives are to: (1) develop multifaceted understandings of the unique needs, challenges, and experiences of ELL students in order to advocate for their success; (2) develop curriculum, including lesson and unit plans, that integrates language and content for ELL students at various levels of English proficiency; and (3) instruct ELL students using cutting-edge, research-based teaching methods.

The ESL Certificate of Graduate Study also represents an opportunity for prospective teachers of ESL to continue their professional development in the Master of Education in Teacher Leadership and in the Master of Arts in Urban Education and Community Studies, ESL Concentration.

Program Requirements

Required Courses 15 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
BLED 40510	Issues of Language & Cultural Diversity in ESL/Bilingual Programs	3
BLED 40512	Linguistics & Second Language Acquisition for Teaching Languages	3
BLED 40515	Understanding Immigrant-Origin Students: Language, Culture, and Mobility	3
BLED 40520	Planning, Teaching & Assessment in ESL	3
BLED 40522	Integrating Language & Content in ESL/Bilingual Education	3

Total Required Credits for the Program 15 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and/or Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The Certificate of Graduate Study in English as a Second Language is a Category 1 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information

Brooke Hoffman
Herman D. James Hall
856.256.4750
hoffmanby@rowan.edu

Certificate of Graduate Study in Learning Disabilities (COGS)

The Certificate of Graduate Study in Learning Disabilities Program (COGS in LD) is designed for teachers who are looking to broaden their knowledge and skills to better serve students with learning difficulties. The goals and objectives for the program include the further development of educational leaders in supporting students, parents, and colleagues in the field. Graduate students complete the Certificate of Graduate Study in Learning Disabilities with knowledge and skills in the current research on learning disabilities and methods so as to more effectively serve individuals with learning disabilities; and, in this program they are trained to be educational collaborators and leaders, to be change agents in their classrooms, and school districts.

Courses in this program may be used to satisfy some of the course requirements in Rowan University's Master of Arts in Special Education program or Learning Disabilities Teacher Consultant Certification program. For more information, please visit https://global.rowan.edu/programs.

Program Requirements

Required Courses 15 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
LDTC 18503	Foundations of Learning Disabilities	3
LDTC 18510	Applied Learning Theories	3
LDTC 18520	Neurological Basis of Educational Disorders	3
READ 30530	Teaching Reading to Students with Disabilities	3
SPED 08555	Educational Psychology of the Exceptional Learner	3

Total Required Credits for the Program 15 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and/or Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The Certificate of Graduate Study in Learning Disabilities is a Category 1 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information

Nanci Paparo
Herman D. James Hall
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paparo@rowan.edu

Certificate of Graduate Study in Reading (COGS)

This program meets the increasing need for highly qualified practitioners in the area of reading. This program benefits classroom teachers P-12 who wish to increase their knowledge of literacy instruction. It offers a strong pedagogical and theoretical core from the reading discipline that will enable teachers to pursue an advanced degree. The Certificate of Graduate Study in Reading does not lead to any state certification. All courses carry over to the Master of Arts in Reading as appropriate.

Program Requirements

Required Courses 15 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
READ 30515	Teaching Reading & Writing Across the Grades	3
READ 30520	Content Area Literacy	3
READ 30530	Teaching Reading to Students with Disabilities	3
READ 30535	Word Study: Phonics, Spelling & Vocabulary Instruction	3
READ 30545	Using Multicultural Literature in the K-12 Reading & Writing Classroom	3

Note: All courses are offered online in an 8-week format.

Total Required Credits for the Program 15 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and/or Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The Certificate of Graduate Study in Reading is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information Susan Browne
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Xiufang Chen
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Certificate of Graduate Study in Reading/Writing Literacy (COGS)

This hybrid program meets the increasing need for highly qualified practitioners in the area of Reading/Writing Literacy as required by the Common Core English and Language Arts Standards. This program benefits classroom teachers P-12 who wish to increase their knowledge of literacy instruction. Courses in this program also enable teachers to apply for National Board Certification by building content area knowledge in reading and writing. The Certificate of Graduate Study in Reading/Writing Literacy does not lead to any state certification. All courses carry over to either the Master of Arts in Writing or the Master of Arts in Reading as appropriate.

Program Requirements

Required Courses 15 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
Students can select any 5 courses from the courses listed below:		
MAWR 01549	Issues in Composition	3
MAWR 01556	Assessment of Writing	3
READ 30515	Teaching Reading & Writing Across the Grades	3
READ 30520	Content Area Literacy	3
READ 30535	Word Study: Phonics, Spelling & Vocabulary Instruction	3
READ 30552	Selected Topics in Reading	3

MAWR 01618	Special Topics in Writing	3

Note: All READ courses are offered online in an 8-week format. All MAWR courses are offered face-to-face in a 15-week format.

Total Required Credits for the Program 15 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and/or Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The Certificate of Graduate Study in Reading/Writing Literacy is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information

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Xiufang Chen
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Certificate of Graduate Study in Special Education (COGS)

The Certificate of Graduate Study (COGS) in Special Education is designed for general education teachers who wish to increase their knowledge of special education, as well as special education teachers who wish to pursue further coursework at the graduate level. The goal of this certificate is to provide teachers with an overview of the salient issues in special education, as well as opportunities to focus on the essential aspects of evidence-based practices. *This COGS is for advanced content knowledge only and does not lead to any certification or endorsement.*

This Certificate of Graduate Study is offered in an online format and can be used to satisfy the Content Certificate of Graduate Study requirement in the Master of Education in Teacher Leadership program. Teachers who successfully complete the Certificate of Graduate Study coursework can also opt to continue pursuit of the Teacher of Students with Disabilities Graduate Endorsement Program (see a department representative for additional details).

Program Requirements

Required Courses 15 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
READ 30530	Teaching Reading to Students with Disabilities	3
SELN 10581	Implementing Positive Behavior Supports	3
SELN 10585	Educational Assessment in Special Education	3
SPED 08515	Curriculum, Instruction, Transition in Special Education	3
SPED 08555	Education and Psychology of Students with Disabilities	3

Total Required Credits for the Program 15 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and/or Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The Certificate of Graduate Study in Special Education is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
Nicole M. Edwards, Ph.D.
Herman D. James Hall
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Certificate of Graduate Study in Teacher Leadership (COGS)

The Certificate of Graduate Study (COGS) in Teacher Leadership is designed for teachers who want to develop and hone their leadership skills but wish to remain in the classroom. Candidates become successful mentor/master teachers by utilizing data in instructional and pedagogical decision-making, supporting and delivering job-embedded professional learning, and evaluating programs aimed at improving schooling for all P-12 learners, their families, and the community. The COGS in Teacher Leadership also serves as the core courses for the M.Ed. in Teacher Leadership and is fully online.

The following seven core propositions of the New Jersey State Teacher Model Standards provide the focus for the COGS in Teacher Leadership:

- Fostering a collaborative culture to support educator development and student learning.
- Accessing and using research to improve practice and student learning.
- Promoting professional learning for continuous improvement.
- Facilitating improvements in instruction and student learning.
- Promoting the use of assessments and data for school and district Improvement.
- Improving outreach and collaboration with families and community.
- Advocating for student learning and the profession.

Program Requirements

Required Courses 18 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
METL 50512	Curriculum Development for Teacher Leaders and Other School Professionals	3
METL 50514	Agency in Teacher Leadership	3
METL 50511	Teacher Leadership and Learning Communities	3
METL 50516	Analysis of Classroom Teacher Behaviors	3
METL 01624	Educational Change	3
METL 50513	Teacher Leadership in Practice	3

If students hold National Board certification, two courses in the Core/Teacher Leadership Certificate of Graduate Study will be waived.

Total Required Credits for the Program 18 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and/or Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The Certificate of Graduate Study in Teacher Leadership is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
John J. Quinesso, Jr.
Department of Interdisciplinary and Inclusive Education
Herman D. James Hall
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Certificate of Graduate Study in Teaching in Urban and Diverse Settings (COGS)

Students who pursue this certificate will have the opportunity to deepen their understandings of the complexity of teaching in urban educational settings. A regional survey of P-12 principals in 2015 resulted in 80% of principals naming "the need for teaching professionals with training in urban/multicultural education" as a high/very high need; further, when asked "what are your top priorities for teacher preparation," 22% named urban education/multicultural education. Of 746 completers, 102 (or 14% of schools) indicate that urban education/multicultural education was an area that is underserved in their school/district. In that same survey, 45% offer a pay scale increase for teachers getting advanced degrees in an underserved area, and 25% offer some form of tuition support. Further, the US Department of Education's Teacher Shortage areas report indicates that Newark, Trenton, Camden, Philadelphia, and Baltimore continue to face shortages in qualified teachers, in part due the high turnover- in urban settings, 45% of teachers leave the profession in their first five years (Ingersoll et al, 2014), creating a constant demand- this program intends to support educators with the skills to navigate the unique challenges inherent in urban settings.

Program Requirements

Required Courses 12 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
CASE 90510	Power & Privilege: The Social Construction of Difference	3
CASE 90530	Curriculum Theories in Urban Education	3
CASE 90533	Critical Pedagogy	3
CASE 90531	Critical Consciousness: Sharing Power and Voice with Students	3
or CASE 90532	Working with Families and Communities	3

Total Required Credits for the Program 12 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and/or Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The COGS in Teaching in Urban and Diverse Settings is a Category 1 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information

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Herman D. James Hall
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Certifications, Endorsements & Related Post-Baccalaureate Programs (Non-Degree)

Learning Disabilities Teacher-Consultant Certification (LDTC)

Learning Disabilities Teacher-Consultants work in collaboration with other members of a child study team to determine eligibility for special services. LDT-Cs also consult with parents, teachers, and other school personnel to provide research-based instructional strategies to assist pupils struggling academically.

Applicants who have earned a master's degree in education from another institution, or a master's degree in a related field (e.g., Special Education or Reading), may apply to the Learning Disabilities Teacher Consultant (LDTC) certification program.

This program meets all State of New Jersey requirements for the LDT-C certificate†. It also received national recognition for accreditation through CEC for educational diagnosticians.

Program Requirements

Required Courses 27 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
LDTC 18516	Applied Tests and Measurements	3
LDTC 18510	Applied Theories of Learning	3
SPED 08555	Education & Psychology of Exceptional Learners	3
LDTC 18520	Neurological Bases of Educational Disorders	3
READ 30530	Teaching Reading to Exceptional Children	3
LDTC 18504	Assessment of Learning Disabilities	3
LDTC 18505	Correction of Learning Disabilities	3
LDTC 18525	Advanced Assessment Techniques	3
LDTC 18650*	Clinical & Field Experiences in Learning Disabilities	3

** Matriculated students only and only with permission of program advisor.*

Total Required Credits for the Program 27 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and/or Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The Learning Disabilities Teacher/Consultant Certification (LDTC) is a Category 1 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information

Nanci Paparo
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Supervisor Certification

The Supervisor Certification program meets the requirements specified by the New Jersey Department of Education for state certification† and is designed to serve the person who has already earned a Master's degree in some field and who wants to qualify as a supervisor in the public schools: one who is charged with authority and responsibility for the continuing direction and guidance of the work of instructional personnel.

Program Requirements

Required Courses 12 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
EDSU 28546	Educational Organizations & Leadership	3
EDSU 28510	Curriculum Design & Development for Instructional Leaders	3
EDSU 28522	Instructional Leadership & Supervision	3
CURR 29590	Curriculum Evaluation	3

Total Required Credits for the Program 12 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and/or Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The Supervisor Certification is a Category 1 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator Contact Information
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Herman D. James Hall
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Program Advisor Contact Information
Miguel Greenup
Herman D. James Hall
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Graduate Endorsement: Bilingual/Bicultural Education

This program responds to the need for highly qualified teachers prepared to teach content in both the student's native language and in English to the growing numbers of English language learners in the schools. The program, approved by the New Jersey State Department of Education†, includes 12 credits hours of formal instruction in the following topics: linguistics, language acquisition, development of literacy skills for the second language learner, methods of teaching content in bilingual education, and theory and practice of bilingual education. Specific objectives emphasize the application of theory to practice, development of long-range and short-range plans that integrate language and content, design of appropriate authentic assessment instruments, and use of technology to research content and instructional techniques.

Program Requirements

Required Courses 12 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
BLED 40510	Issues of Language & Cultural Diversity in ESL/Bilingual Programs	3
BLED 40512	Linguistics & Second Language Acquisition for Teaching Languages	3
BLED 40521	Teaching Bilingual Education: Process & Practice	3
BLED 40522	Integrating Language & Content in the ESL/Bilingual Education Classroom	3

Total Required Credits for the Program 12 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and/or Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The GE in Bilingual/Bicultural Education is a Category 1 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information

Brooke Hoffman
Herman D. James Hall
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Graduate Endorsement: Teacher of Students with Disabilities

This program is designed for individuals who possess a standard instructional certificate, or possess/are eligible for CEAS and wish to obtain Teacher of Students with Disabilities certification in New Jersey†. Students must teach full-time in a P-12 class setting to complete field-related assignments throughout this program.

The program aims to provide advanced studies focusing on the educational, psychological, and sociological needs of children and youth with disabilities. Each course in the program builds on the earlier knowledge and skills gained in the candidate's initial certification programs.

The coursework and related field experiences are designed to foster an understanding of students with special learning needs, combined with pedagogical skills to support these needs and provide appropriate curriculum accommodations and modifications when necessary. Upon completing the program, candidates will be recommended for certification†.

Candidates who want to pursue a Master's degree may transfer nine (9) credit hours to the Master of Arts in Special Education program and must apply through Rowan Global Student Services.

Students who have completed the Certificate of Graduate Study in Special Education and want to pursue the certification of Teacher of Students with Disabilities need to reapply for this endorsement program.

Program Requirements

Required Courses 21 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
SELN 10581	Implementing Positive Behavior Supports	3
SELN 10585	Educational Assessment in Special Education	3
SELN 10592*	Clinical Seminar in Special Education (take in the same module with SPED 08520)	1
SPED 08515	Curriculum, Instruction, Transition in Special Education	3
SPED 08520*	Clinical Experiences in Special Education (take in the same module with SELN 10592)	2
READ 30530	Teaching Reading to Students with Disabilities	3
SPED 08540	Technology for Students with Disabilities	3
SPED 08555	Education and Psychology of Students with Disabilities	3

** Taken concurrently after successful completion of all other Graduate Endorsement courses.*

Note: Students must complete an application 4-6 months in advance on TK20 for SPED 08520.

Total Required Credits for the Program 21 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and/or Thesis Requirements

Successful completion of required courses and comprehensive exam

Minimum Required Grades and Cumulative GPA

The GE in Teacher of Student with Disabilities is a Category 3 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
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Herman D. James Hall
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edwardsn@rowan.edu

Post-Baccalaureate Certification: Teacher of Reading

The Post-Baccalaureate Program in Teacher of Reading is an endorsement program that leads to certification as a Teacher of Reading†. It is available to students who have already been admitted to teacher certification programs or who already hold New Jersey teaching certificates. Reading certification is granted only when a student has fulfilled all requirements for a major teaching certificate. To matriculate, students must complete an introductory reading course and satisfy the requirements listed below.

The program requires students to successfully complete 30 semester hours of coursework in reading and reading-related areas to obtain Teacher of Reading Certification. Students may fulfill the requirement for the New Jersey Teacher of Reading Endorsement† with undergraduate coursework, graduate coursework, or a combination of the two.

Program Requirements

Reading Theory and Pedagogy — 12 s.h.

(s.h.: semester hours/credit hours)

Choose from the following:

Course #	Course Title	S.H.
READ 30311	Literacy Pedagogy I	3
READ 30319	Teaching Reading & Writing in the Content Area (for Subject Matter Education)	3
READ 30320	Language Development & Emergent Literacy (for Early Childhood Education)	4
READ 30350	Using Children's Literature in the Reading/Writing Classroom	3
READ 30351	Literacy Pedagogy II	2
and INCL 02310	STREAM 1: Social Studies, ELA, and the Arts	2
READ 30347	Phonics & Spelling	3
READ 30515	Teaching Reading and Writing Across the Grades	3
READ 30520	Content Area Literacy	3
READ 30530	Teaching Reading to the Exceptional Child	3
READ 30535	Word Study: Phonics, Spelling & Vocabulary Instruction	3
READ 30545	Using Multicultural Literature in the K-12 Reading & Writing Classroom	3

Application through Tutoring — 6 s.h.

Choose from the following:

Course #	Course Title	S.H.
READ 30421	School Reading Problems	3
READ 30451	Supervised Clinical Practice	3
READ 30550	Diagnosis of Remedial Reading Problems	3
READ 30560	Correction of Remedial Reading Problems	3
READ 30570	Clinical Experiences in Reading	6

Core/Supporting Courses — 12 s.h.

Choose from the following:

Course #	Course Title	S.H.
FNDS 21230	Characteristics of Knowledge Acquisition	3
PSY 22512	Educational Psychology	3
PSY 22586	Psychology of Motivation & Learning	3
READ 30120	Literacies in Today's World	3
SECD 03350	Teaching Students of Linguistic & Cultural Diversity	1
SPED 08130	Human Exceptionality	3
WA 01401	Writer's Mind	3
WA 01358	Writing and Craft for Elementary Students	3

Total Required Credits for the Program 30 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and/or Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The Post-Baccalaureate Certification in Teacher of Reading is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
Marjorie Madden, Ph.D.
Associate Professor
2065 Herman D. James Hall
856.256.4772
madden@rowan.edu

Post-Baccalaureate Certification: Teacher of Students with Disabilities

This program leads to the Endorsement in Teacher of Students with Disabilities and is available to students who have completed teacher certification programs and/or who already possess initial New Jersey teaching certification†. The program requires students to successfully complete 27 semester hours of coursework in Special Education and Special Education-related areas to obtain the Teacher of Students with Disabilities Endorsement from the NJ State DOE†. Please note that most classes require a 20-hour field placement component in an approved setting; several of the courses in the program are bundled and must be taken together. The Teacher of Students with Disabilities Endorsement will be granted by the NJ State DOE† only when a student has fulfilled all requirements for the program, including taking and passing the Praxis II exam for Special Education (5354) and the successful completion of Clinical Practice/Clinical Seminar.

Program Requirements

Required Courses 24-27 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
READ 30351	Literacy Pedagogy II	2
or READ 30347	Phonics and Spelling Instruction	3
or READ 30319	Teaching Reading and Writing in the Content Area	3
SPED 08130	Human Exceptionality	3
SPED 08307	Assessment in Special and Inclusive Education	3
SPED 08308	Assistive Technology and Transition Planning	3
SPED 08316	Differentiated Instruction in the Inclusive Classroom	2
or INCL 02330	Differentiating Instruction in the Inclusive Classroom	2
SPED 08360	Positive Behavioral Support Systems	3
SPED 08415	Specialized Instruction for Students with Exceptional Learning Needs	3
SPED 08445*	Clinical Seminar in Special Education	2
SPED 08450*	Clinical Practice in Special Education	3

** Taken after successful completion of all other Post-Baccalaureate: Teacher of Students with Disabilities courses.*

Note: Students who are currently matriculated in the Bachelor of Arts in Education Concentration: Early Childhood Education (P-3) program should consult with their Academic Advisor regarding specific requirements.

Total Required Credits for the Program 24-27 s.h.

Foundation Courses

Successful completion of READ 30311 Literacy Pedagogy I, or equivalent course as determined by the department.

Graduation/Exit, Benchmark, and/or Thesis Requirements

Benchmarks: *Successful completion of all benchmarks is required for continuation in and graduation from the program. Details regarding benchmarks' timing and assessments will be shared with the student throughout the program by the Academic Advisor.*

Benchmark I:

- *Timing*: Occurs after the completion of 22 prescribed credits.

- *Requirements*: Candidates must achieve passing scores on the Praxis I, Praxis II: Subject, and Praxis II: Special Education.
- *Options*: If the student does not successfully pass the benchmark, then the student is able to re-take Assessment Exam or any incomplete coursework, until such time as benchmark is passed or student is made inactive.

Minimum Required Grades and Cumulative GPA

The Post-Baccalaureate in Teacher of Students with Disabilities is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
Amy Accardo, Ed.D.
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Post-Baccalaureate Certification: School Nursing

The Post-Baccalaureate School Nursing Certification Program is designed to build upon the baccalaureate prepared registered nurse's varied educational and experiential foundation of previously acquired knowledge, skills, and attitudes for the enhancement of the nurse's professional performance in the school setting. A dual preparation in health and education best qualifies school nurses for participation in the intraprofessional and interdisciplinary aspects of school health.

The Post-Baccalaureate School Nursing Certification Program reflects a curriculum that requires students to matriculate into the program, have a baccalaureate degree from an accredited college or university, a current New Jersey professional registered nurse (RN) license issued by the New Jersey Board of Nursing and current certificates in cardiopulmonary resuscitation (CPR) and automated external defibrillators (AED).

The curriculum permits students to become eligible for the New Jersey Standard Educational Services Certificate with a School Nurse Endorsement†. It is a non-degree post- baccalaureate certification program designed to prepare registered nurses with the course requirements to meet the mandates of the New Jersey Administrative Code (NJAC 6A: 9-13.3) and with the NASN Standards of Professional School Nursing Practice and Standards of Care.

Program Requirements

Required Courses 18 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
SNUR 92407	School & Family Issues for Children with Ongoing Health Care Needs	3
SNUR 92430	Methods & Materials in Health Teaching for School Nurses	3
SNUR 92444	Practicum in School Nursing	3
SNUR 92445	Internship in Health Teaching for School Nursing	3
SNUR 92466	School Health Services	3
SPED 08130	Human Exceptionality	3

Total Required Credits for the Program 18 s.h.

Foundation Courses

Eligible applicants must have successfully completed the following undergraduate foundation courses at an accredited institution. During the admissions process, the School Nursing program coordinator/advisor will determine foundation course equivalencies and how any unfinished undergraduate foundation courses can be scheduled concurrently with post-baccalaureate enrollment. If applicable, official notification of any unfinished foundation courses will be included in the applicant's official admission decision letter from Rowan University.

- FC-1. NURS 03401 Community Health Nursing (3.0 s.h.)
- FC-2. NURS 03303 Health Assessment (3.0 s.h.)

Graduation/Exit, Benchmark, and/or Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The Post-Baccalaureate in School Nursing Certification is a Category 1 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
Lynne M. Valente, MSN/Ed, RN, NCSN, CSN-NJ
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Henry M. Rowan College of Engineering

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Mission

The Henry M. Rowan College of Engineering fosters an inclusive environment where impactful research and design are an integral part of educating critical thinkers and adaptive, creative problem solvers in a changing and challenged world.

Objectives

The objectives of the undergraduate engineering programs are to enable students to:

- Understand and apply the core science and mathematics principles that form the basis of engineering disciplines,
- Work individually and in teams to identify and solve complex engineering problems and develop an understanding of interdisciplinary problem solving,
- Understand and apply advanced technology (computers and laboratory equipment) to solve complex engineering problems,
- Understand the importance of the humanities and social sciences as part of a well-rounded education and the practice of engineering,
- Have a strong sense of the importance of ethics in an engineering setting as well as other aspects of their lives, and
- Develop communication skills so that they can perform engineering functions effectively.

Accreditation

Biomedical, Chemical, Civil, Electrical & Computer, and Mechanical undergraduate programs are ABET accredited. ABET is a professional accrediting organization that is nationally recognized by the Council on Higher Education Accreditation (CHEA). In cooperation with its associated professional and technical societies, ABET has developed criteria, or standards, for the evaluation of educational programs.

The criteria require that the programs demonstrate that graduates have mastered the knowledge and skills required and that the institution has in place a process for continuous improvement. The Engineering Accreditation Commission (EAC) of ABET administers the criteria, conducts the evaluations and accredits the programs.

Departments

The Henry M. Rowan College of Engineering houses the following academic departments: Biomedical Engineering, Chemical Engineering, Civil & Environmental Engineering, Electrical & Computer Engineering, Experiential Engineering Education, and Mechanical Engineering. (Not all departments offer programs through the Division of Global Learning & Partnerships.)

Programs Offered

Engineering programs offered through the Division of Global Learning & Partnerships are listed below in order of degree/program type and then in alphabetical order by program name. Details about each program are then listed within the catalog in the same order. For the most up-to-date information regarding mode of delivery options for your program of interest, please visit https://global.rowan.edu/programs.

DOCTORAL DEGREES

Program Name	Format/location	Program/Major Codes	Avail FT/PT	Total credits
Doctor of Philosophy in Biomedical Engineering	Face-to-Face/Glassboro	PHD-BIOMEDEN/D902	Full-time	72
Doctor of Philosophy in Engineering	Face-to-Face/Glassboro	PHD-ENGR/D901	Both	72
Concentration Name		**Code**		
Chemical Engineering		C921		72
Civil & Environmental Engineering		C920		72
Electrical & Computer Engineering		C033		72
Experiential Engineering Education		C450		72
Materials Science & Engineering		C923		72
Mechanical Engineering		C922		72

MASTER'S DEGREES

Program Name	Format/location	Program/Major Codes	Avail FT/PT	Total credits
Master of Engineering Management	100% online and accelerated	MEM-ENMAN/G913	Part-time	30
Master of Science in Engineering	Face-to-Face/Glassboro	MS-ENGR/G901	Both	30
Master of Science in Biomedical Engineering	Face-to-Face/Glassboro	MS-BIOMEDENG/G918	Both	30
Master of Science in Chemical Engineering	Face-to-Face/Glassboro	MS- CHEMENGR/G907	Both	30
Master of Science in Civil & Environmental Engineering	Face-to-Face/Glassboro	MS-CIVENGR/G905	Both	30
Master of Science in Electrical & Computer Engineering	Face-to-Face/Glassboro	MS-ECENGR/G903	Both	30
Master of Science in Mechanical Engineering	Face-to-Face/Glassboro	MS- MECHENGR/G904	Both	30

CERTIFICATES OF GRADUATE STUDY / COGS (NON-DEGREE)

Program Name	Format/Location	Program/Major Codes	Avail FT/PT	Total Credits
Certificate of Graduate Study in Combat Systems Engineering	Face-to-Face/Glassboro	COG-COMSYEN/G921	Both	12
Certificate of Graduate Study in Construction Management	Online	COG-CNSTRMGT/G106	Both	12
Certificate of Graduate Study in Engineering Analytics and Quality Control	Face-to-Face/Glassboro	COG-ENANAQC/G922	Both	12
Certificate of Graduate Study in Environmental Engineering	Face-to-Face/Glassboro	COG-ENVEN/G941	Both	12
Certificate of Graduate Study in Machine Learning	Face-to-Face/Glassboro and Online	COG-MACHLRN/G936	Both	12

Certificate of Graduate Study in Project Management	Face-to-Face/Glassboro	COG-PMGMT/G107	Both	12
Certificate of Graduate Study in Transportation Engineering	Face-to-Face/Glassboro/tCOG-TRANSEN/G940		Both	12

Admissions

For the most up-to-date information regarding admission requirements, entry points, and application deadlines, please visit https://global.rowan.edu/programs . Click on your program of interest to be connected to program and admission details.

Academic Program Policy Categories

For the purposes of both the Minimum Satisfactory Academic Progress policy and the Minimum Graduation Requirements policy, post-baccalaureate/graduate academic programs at Rowan University fall into one of three major categories which are identified by their grade requirements as outlined below. (See individual program descriptions for academic categories.)

Category 1: To maintain Minimum Satisfactory Academic Progress in and to successfully graduate from a Category 1 program students must:

- Earn no more than two total "B-" grades
- Earn no grades lower than a "B-"
- Earn an official cumulative GPA (according to matriculation level) of at least 3.000 on Rowan's 4.000 scale

Category 2: To maintain Minimum Satisfactory Academic Progress in and to successfully graduate from a Category 2 program students must:

- Earn no grades lower than a "B-"
- Earn an official cumulative GPA (according to matriculation level) of at least 3.000 on Rowan's 4.000 scale

Category 3: To maintain Minimum Satisfactory Academic Progress in and to successfully graduate from a Category 3 program students must:

- Earn no more than two total C grades of any combination of "C+" or "C." (C- grades are not acceptable.)
- Earn no grades lower than a "C"
- Earn an official cumulative GPA (according to matriculation level) of at least 3.000 on Rowan's 4.000 scale

Policy Prior to Fall 2013 Matriculation

The academic review and minimum graduation requirements review policies will be applied to Rowan graduate and post-baccalaureate students who matriculate beginning Fall 2013 or later; however, current students (those matriculated and active before Fall 2013) will be grandfathered under the prior policy/practice, whose grade and GPA requirements are the same as Academic Review Category 3.

Doctoral Degrees

Doctor of Philosophy in Biomedical Engineering (Ph.D.)

The Doctor of Philosophy degree in Biomedical Engineering in the Henry M. Rowan College of Engineering (HRCOE) emphasizes intensive, novel research within a flexible graduate curriculum with a core focused on technical fundamentals.

With faculty-mentored biomedical research, students are trained to use engineering approaches to solve a novel contemporary biomedical problem in areas including biomaterials engineering, tissue engineering, biomechanics, biomedical robotics, drug delivery, biomolecule detection, and other emerging areas. Students in the biomedical engineering doctoral program benefit from our close association with physicians at Cooper Medical School of Rowan University and Rowan University School of Osteopathic Medicine, which stimulates translation into the clinic.

With world-class research at the forefront of HRCOE's biomedical engineering discipline, as well as a growing business school on the main campus, HRCOE allows students to take advantage of South Jersey Technology Park at Rowan University, which fosters the translation of applied research into commercial products and processes.

Program Requirements

The Doctor of Philosophy degree in Biomedical Engineering at Rowan University requires the completion of 72 hours of graduate level coursework and research credits as well as the successful completion of a novel research project completed under the mentorship of a faculty advisor culminating in a Doctoral Dissertation. The Doctoral Dissertation should demonstrate the student's ability to effectively apply engineering principles to solve a contemporary biomedical problem.

Coursework:

- Core Courses: Minimum of 12 s.h. (chosen in consult with advisor)
- Elective Courses: Minimum of 18 s.h. (chosen in consult with advisor)
- Research Credits: up to 42 s.h.

Research & Dissertation: Successful defense of Doctoral Dissertation

Biomedical Engineering Core Courses

Students must choose a minimum of 12 s.h. from the following bank of courses. An advanced mathematics course is required. Course substitutions can be made with approval of the students Dissertation committee.

Required Core Courses 12 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S. H.
MATH 01515	Engineering Applications of Analysis	3
BME 11610	Biomedical Imaging	3
BME 11611	Biological Transport Phenomena	3
BME 11550	Advanced Biocompatibility and Immunoengineering	3
BME 11573	Biomaterials Engineering	3
BIOL 11540	Introduction to Biochemistry	3
CHE 06586	Adv Engineering Thermodynamics	3
MBS 43751	Fundamentals of Biochemistry and Molecular Biology I	3
MBS 43752	Fundamentals of Cell Biology II	3

Biomedical Engineering Elective Courses

Students must choose 18 s.h. from the following bank of courses in consultation with their advisor. Please note: The following list of elective courses is not limiting; additional courses may be approved by the academic advisor. Core courses in excess of 12 s.h. count as electives.

Elective Courses 18 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S. H.
BME 11551	Advanced Mechanobiology	3
BME 11552	Advanced Cell Bioelectricity	3
BME 11553	Regulatory Strategies in Biomedical Engineering	3
BME 11554	Advanced Stem Cell Engineering	3
BME 11555	Fundamentals of Synthetic Biology	3
BME 11556	Advanced Nanoparticle Design and Engineering	3
BME 11568	Advanced Phenomena in Biomaterials Science	3
BME 11574	Advanced Topics in Controlled Release	3
BME 11590	Orthopedic Engineering	3
BME 11590	Robotics and Image Guided Surgery	3

BME 11602	Writing and Winning Grant Proposal in the Biomedical Field	3
ECE 09560	Artificial Neural Networks	3
ENGR 01510	Finite Element Analysis	3
ENGR 01511	Engineering Optimization	3
ENGR 01512	Principles of Nanotechnology	3
CEE 08573	Advanced Structural Analysis	3
CEE 08675	Fracture Mechanics	3
CHE 06518	Polymer Engineering	3
CHE 06571	Biomedical Control Systems	3
CHE 06572	Biomedical Process Eng.	3
CHE 06576	Bioseparation Processes I	3
CHE 06578	Tissue Engineering	3
CHE 06584	Controlled Release Theory	3
ME 10505	Mechanics of Composites	3
ME 10506	Computational Material Science	3
ME 10522	Computational Fluid Dynamics	3
ME 10550	Adv. Solid Mechanics	3
ME 10570	Principles in Biomechanics	3
ME 10571	Principles in Biotransport	3
MATH 01505	Probability and Mathematical Statistics	3
MATH 01512	Complex Analysis I	3
MATH 01521	Nonlinear Differential Equations	3
MATH 03550	Topics in Discrete Mathematics	3
MATH 03610	Applied Statistical Epidemiology	3
MATH 03611	Special Topics in Biomathematics	3
STAT 02510	Introduction to Statistical Data Analysis	3
STAT 02525	Design and Analysis of Experiments	3

Biomedical Engineering Research Courses 42 s.h.

Research hours are credited for laboratory research leading to a Doctoral Dissertation.

Course #	Course Title	S. H.
ENGR 01799	Ph.D. Dissertation Research	3

Total Required Credits for the Program 72 s.h.

72 credit hours of graduate level coursework and research hours. A minimum of 30 hours must come from core/elective coursework with a minimum of 12 of these coursework hours coming from Biomedical Engineering Core Courses. Credits beyond 30 may come from additional core/elective coursework or Ph.D. Dissertation Research hours (up to 42).

Foundation Courses

The following undergraduate courses are required.

- Prior to applying: Chemistry I, Physics I, Calculus I, and Calculus II
- Prior to starting the program: Calculus III, Differential Equations* and Linear Algebra*

*Differential Equations and Linear Algebra may be taken during the first semester of residence (these courses are in addition to 30 hours of graduate coursework).

For applicants with undergraduate majors that are not Biomedical Engineering or a closely related field, Biomedical Engineering Core undergraduate courses may be required for completion of the degree (these courses are in addition to 30 hours of graduate coursework).

Graduation/Exit/Thesis Requirements

- Successful completion of Preliminary Exam, Qualifying Exam & Dissertation Defense
- Scholarship including: Peer reviewed journal papers, Conference presentations.
- BME Seminar attendance each semester (BME 11600, 0 credits)
- Safety and responsible conduct of research training
- Completion of two mentored TA assignments
- Students without comparable previous undergraduate coursework may be required to take undergraduate Biomedical Engineering Foundation courses in addition to their graduate coursework requirements.

Minimum Required Grades and Cumulative GPA

The Doctor of Philosophy in Biomedical Engineering is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Graduate Program Chair Contact Information
Vince Beachley
Engineering Hall
856.256.5329
beachley@rowan.edu

Department Head Contact Information
Mark Byrne
Engineering Hall
856.256.5773
byrnem@rowan.edu

Doctor of Philosophy in Engineering (Ph.D.)

Rowan's Doctor of Philosophy in Engineering is a terminal degree program that is specifically designed to meet the changing needs of researchers, scholars and engineers in academia, industry, and government. The primary goal of this program is, therefore, to prepare students for careers in research and/or academics by providing an environment that closely reflects the realities and expectations encountered by today's academicians, professional scientists and research engineers. The program offers a highly flexible inter- and multi-disciplinary curricular structure, allowing concentration in any (or multiple) of the traditional or emerging engineering disciplines. The primary strength of the program is involving students in activities that they are most likely to encounter in real-world academic or industrial settings.

The following concentrations are offered:

- Chemical Engineering/C921
- Civil & Environmental Engineering/C920
- Electrical & Computer Engineering/C912
- Experiential Engineering Education/C450
- Materials Science & Engineering/C923
- Mechanical Engineering/C922

Program Requirements

- The Rowan University Doctor of Philosophy in Engineering program requires the completion of coursework, teaching assistantships, research requirements, dissertation, and dissertation defense.
- For a student who possesses a bachelor's degree, a minimum of 72 semester hours of graduate-level coursework will be required.
- For a student who possesses a master's degree in a related field, a minimum of 42 semester hours (credits) of graduate-level coursework beyond the master's degree will be required. Up to 30 of the credits earned in pursuit of the master's degree may be transferable.
- For specific curriculum requirements for each concentration, refer to their specific web page and/or specific Graduate Program Coordinator.

Required Core Courses 29 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S. H.
ENGR 01599	Master's Research	No more than 9
ENGR 01700	Graduate Seminar	0
ENGR 01601	Effective Teaching in Academic, Corporate and Government Settings	3
ENGR 01602	Strategic Technical Writing and Winning Grant Proposals	2
ENGR 01799	Ph.D. Dissertation Research	At least 12
MATH 015xx/STAT 025xx	One approved graduate-level Math class (see list of Approved Graduate Math Courses below)	3

Approved Graduate Courses†

(s.h.: semester hours/credit hours)

General Engineering

Course #	Course Title	S. H.
ENGR 01510	Finite Element Analysis	3
ENGR 01511	Engineering Optimization	3
ENGR 01512	Principles of Nanotechnology	3

Electrical & Computer Engineering

Course #	Course Title	S. H.
ECE 09504	Special Topics in Electrical & Computer Engineering	3
ECE 09509	Virtual Reality Systems	3
ECE 09521	Fundamentals in Systems Engineering	3
ECE 09523	Advanced Radar Systems	3
ECE 09524	Advanced War Gaming and C4ISR	3
ECE 09525	Advanced Command and Control	3
ECE 09526	Advanced Weapon Systems	3
ECE 09551	Digital Signal Processing	3
ECE 09552	Digital Image Processing	3
ECE 09553	Digital Speech Processing	3
ECE 09554	Theory and Engineering Application of Wavelets	3
ECE 09555	Advanced Topics in Pattern Recognition	3
ECE 09556	Embedded System Design	3
ECE 09560	Artificial Neural Networks	3
ECE 09566	Advanced Topics in Systems, Devices & Alg. in Bioinformatics	3
ECE 09568	Discrete Event Systems	3
ECE 09569	System on Chip Verification	3
ECE 09571	Instrumentation	3
ECE 09572	Advanced Smart Grid	3
ECE 09573	Advanced Smart Sensors	3
ECE 09582	Memristors and Nanoelectronic VLSI	3
ECE 09585	Advanced Engineering Cyber Security	3
ECE 09586	Advanced Portable Platform Development	3
ECE 09590	Advanced Emerging Topics in Computer Engineering	3
ECE 09593	Advanced Emerging Topics in Biomedical Systems	3
ECE 09595	Advanced Emerging Topics in Computational Intelligence, Machine Learning & Data Mining	3
ECE 09651	Detection & Estimation Theory	3

ECE 09504 series constitute the Emerging Topics in Electrical and Computer Engineering sequence. These classes can be taken multiple times when approved by the advisor. Multiple sections of this course are offered during each semester with different content on emerging topics.

These four courses are also part of the Certificate of Graduate Studies in Combat Systems Engineering (CSE), as well as the Master in Engineering Management with concentration in Combat Systems Engineering. The CSE programs are designed and delivered in cooperation with Lockheed Martin Corporation.

Civil & Environmental Engineering

Course #	Course Title	S. H.
CEE 08504	Engineering Estimating	3
CEE 08507	Prestressed Concrete	3
CEE 08512	Advanced Environmental Treatment Process	3
CEE 08522	Site Remediation Engineering	3
CEE 08531	Solid/Hazardous Water Management	3
CEE 08532	Pollutant Fate & Transport	3
CEE 08533	Integrated Solid Waste Management	3
CEE 08543	Advanced Water Resources	3
CEE 08544	Hydraulic Design	3
CEE 08545	Environmental Fluid Mechanics	3
CEE 08552	Foundation Engineering	3
CEE 08553	Earth Retaining Systems	3
CEE 08562	Advanced Transportation	3
CEE 08564	Design Elements Transport Engineering	3
CEE 08573	Advanced Structural Analysis	3
CEE 08584	Prestressed Concrete	3
CEE 08585	Advanced Reinforced Concrete	3
CEE 08586	Bridge Engineering	3

Chemical Engineering

Course #	Course Title	S. H.
CHE 06506	Process Heat Transfer	3
CHE 06508	Membrane Process Tech	3
CHE 06510	Biochemical Engineering	3
CHE 06512	Safety Process Industry	3

CHE 06514	Trans Phenomena Engineering	3
CHE 06515	Advanced Reactor Design	3
CHE 06516	Advanced Separation Process Technology	3
CHE 06518	Polymer Engineering	3
CHE 06520	Green Engineering Design in Chemical Ind.	3
CHE 06528	Fluid Flow Application Process/Manufacturing	3
CHE 06568	Electrochemical Engineering	3
CHE 06570	Air Pollution Control	3
CHE 06571	Biomedical Control Systems	3
CHE 06572	Biomedical Process Eng	3
CHE 06573	Biomaterials Eng	3
CHE 06574	Advances Particle Tech	3
CHE 06575	Biopharmaceuticals & Industrial Mixing	3
CHE 06576	Bioseparation Processes I	3
CHE 06577	Advanced Engineering Process Analysis & Experimental Design	3
CHE 06578	Tissue Engineering	3
CHE 06579	Industrial Process Pathways	3
CHE 06580	Optimization of Engineering Projects	3
CHE 06581	Advanced Process Analysis	3
CHE 06584	Controlled Release Theory	3
CHE 06585	Engineering Quality Control	3
CHE 06586	Advanced Engineering Thermodynamics	3

Mechanical Engineering

Course #	Course Title	S. H.
ME 10501	Computer Integrated Manufacturing & Automation	3
ME 10506	Computational Material Science	3
ME 10511	Combustion	3
ME 10513	Principles in Advanced Heat & Mass Transfer	3
ME 10514	Energy Conversion Systems	3
ME 10522	Computational Fluid Dynamics	3
ME 10541	Advanced Mechanism Design	3
ME 10542	Advanced Mechatronics	3
ME 10543	Advanced Design for X	3
ME 10544	Automotive Engineering	3
ME 10550	Advanced Solid Mechanics	3
ME 10551	Mechanics Continuous Media	3
ME 10552	Structural Acoustics	3
ME 10553	Analytical Dynamics	3
ME 10554	Elastic Stability of Structures	3
ME 10570	Principles in Biomechanics	3
ME 10571	Principles of Biotransport	3
ME 10572	Principles of Biomaterials	3
ME 10576	Principles in Orthopaedic Biomechanics	3

Approved Graduate Math Courses†

(s.h.: semester hours/credit hours)

Course #	Course Title	S. H.
MATH 01505	Probability & Mathematical Statistics	3
MATH 01512	Complex Analysis I	3
MATH 01515	Engineering Applications of Analysis	3
MATH 01521	Nonlinear Differential Equations	3
MATH 03511	Operations Research I	3
MATH 03512	Operations Research II	3
STAT 02513	Applied Stochastic Processes	3
STAT 02514	Decision Analysis	3
STAT 02525	Design & Analysis of Experiments	3

†A student may request to take another graduate level course (offered at Rowan or elsewhere) if it is more suitable for his/her research; such a course may also be included as an "approved graduate level class," subject to his/her advisor's and home department head's/chair's approval.

Total Required Credits for the Program 72 s.h.*

**Minimum of 72 credits of graduate-level work beyond a bachelor's degree, or 42 credits of graduate-level work beyond a master's degree in a related field are required. Of these 72 total credits, 42 must come from the following:*

1. At least one approved (see below) graduate level Math class. Certain math intensive engineering courses may be used to satisfy this requirement (3 credits).

2. Effective Teaching in Academic & Corporate Environments (3 credits).

3. Strategic Technical Writing & Winning Grant Proposals (2 credits).

At least 18 course credits (not including Effective Teaching and Strategic Technical Writing courses) must be obtained from graduate only classes (600-level classes, or 500-level classes with no corresponding 400-level equivalent offered at the same time).

A minimum of 21 credits must come from "Research." Up to 9 Research credits may come from ENGR 01599. Students who complete their Master's degree with thesis elsewhere may be considered to have taken 9 credits of ENGR 01599. All remaining Research credits must come from ENGR 01699, the last three (3) of which must be taken during the semester in which the Doctor of Philosophy in Engineering candidate plans to defend his/her Doctor of Philosophy in Engineering Dissertation.

Graduation/Exit/Thesis Requirements

a. Complete a minimum of 72 credits of graduate level work beyond bachelor's degree OR minimum of 42 credits of graduate level work beyond master's degree

b. Completion of all the University's standard Ethical & Responsible Conduct of Research training (including human/animal subject training when applicable)

c. Regular attendance and participation in (0-credit) graduate seminars

d. Successful completion of a Ph.D. Qualifier examination^

e. Successful completion of a Ph.D. Candidacy (proposal) examination^

f. Successful completion of the Career Preparation & Readiness Experience that consists of teaching, grant writing, publishing and service^

g. Successful completion of a Ph.D. dissertation defense^

h. Successful completion of a Ph.D. dissertation^

^ The specific details, nature and scope of these examinations (e.g., format of the exam) and requirements (e.g. number of journal publications, conference publications, patents, number of teaching assignments) will be determined by the student's Doctor of Philosophy in Engineering committee and/or department policies for student's home department as aligned with the Henry M. Rowan College of Engineering policies.

Minimum Required Grades and Cumulative GPA

The Doctor of Philosophy in Engineering is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Concentration Coordinator Contact Information

Chemical Engineering
James Newell
Rowan Hall
856.256.5361
newell@rowan.edu

Civil & Environmental Engineering
Yusuf Mehta
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Electrical and Computer Engineering
Jie Li
Engineering Hall
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lijie@rowan.edu

Experiential Engineering Education
Cheryl Bodnar
Engineering Hall
856.256.5397
bodnar@rowan.edu

Materials Science and Engineering
Joseph Stanzione
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856.256.5356
stanzione@rowan.edu

Mechanical Engineering
Francis (Mac) Haas
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mechgrad@rowan.edu

Master's Degrees

Master of Engineering Management (M.E.M.)

The Master of Engineering Management (M.E.M.) is designed for engineers to develop management and leadership skills. Students in this program receive knowledge of managerial basics such as organizational behavior and teamwork, quantitative decision making, and operational system design. The combination of courses from Rowan's Henry M. Rowan College of Engineering and the Rohrer College of Business, provide an effective balance of innovative technical knowledge and managerial skills required to understand both the engineering and business aspects of technology. The M.E.M. program is online and designed for working professionals to conveniently attend class and complete their engineering management career goals in five consecutive semesters.

Program Requirements

The M.E.M. Program requires 30 semester credit hours (SCH) of graduate-level coursework. Six (6) courses must be taken from the required M.E.M. classes listed below. In addition, students must complete four (4) electives, which are grouped in tracks.

Required Courses for All Tracks 18 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S. H.
EM 01501	Engineering Economics	3
EM 01511	Strategic Risk Management	3
EM 01512	Quality in Engineering Management	3
EM 01541	Engineering Law and Ethics	3
EM 01543	Systems in Engineering Management	3
MIS 02526	Project Management for Engineers	3

Required Track Courses 12 s.h.

Master of Engineering Management students must complete the four courses in their selected track. (Track is selected during the application process.)

Course #	Course Title	S.H.
Combat Systems Engineering Track Courses		
ECE 09523	Advanced Radar Systems	3
ECE 09524	Advanced War Gaming and C4ISR	3
ECE 09525	Advanced Command and Control	3
ECE 09526	Advanced Weapon Systems	3
Construction Management Track Courses		
CEE 08504	Engineering Estimating	3
EM 01521	Construction Management	3
EM 01522	Construction Scheduling	3
EM 01523	Cost Engineering	3
Engineering Analytics and Quality Control Track Courses		
CHE 06577	Advanced Engineering Process Analysis and Experimental Design	3
CHE 06640	Engineering Process Analysis	3
CHE 06641	Engineering Statistical Process Control	3
CHE 06642	Quality Control Methods and Metrics	3
Project Management Track Courses		
EM 01513	Engineering Decision Making	3

EM 01542	Facilities Management	3
MGT 06666	Managing Engineering Teams	3
MGT 06677	Management Skills for Engineers	3
Total Required Credits for the Program		30 s.h.

Foundation Courses

An undergraduate degree must be successfully completed at an accredited institution.

Graduation/Exit, Benchmark, and Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The Master of Engineering Management is a Category 3 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
Steven Chin, Ph.D., P.E.
Vice Dean
Engineering Hall
856.256.5300
chin@rowan.edu

Master of Science in Engineering Overview (M.S.)

The Master of Science in Engineering program at Rowan University effectively prepares individuals to respond to the changing needs of today's engineers. This program provides students with the necessary knowledge, skill set, and training to effectively contribute to the engineering workforce. Students have access to higher level courses leading to a graduate degree and are involved in professional development opportunities which increase the breadth of understanding and application of engineering principles.

Students can choose between a thesis track and a coursework track. Students may also work on a project, which may be counted toward a coursework track degree. Most full-time students work on funded research projects, leading to a thesis. Most part-time students select the coursework track. In order to be eligible for a Research Assistantship, students must select the thesis track.

Tracks

The program includes two tracks. Each has different course and graduation exit requirements which are outlined below.

- Thesis Track: The thesis option requires the completion of 30 semester hours, 6-9 of which are in thesis research/engineering project.
- Non-Thesis Track: The non-thesis option requires the completion of 30 semester hours of coursework.

Programs

Students in the M.S. program may select from the following areas:

- Biomedical Engineering
- Chemical Engineering
- Civil & Environmental Engineering
- Electrical & Computer Engineering
- Engineering Management
- Engineering Education
- Materials Science & Engineering
- Mechanical Engineering

Note: Students may also choose to pursue a tailored Master of Science in Engineering program under the direction of a faculty advisor.

Master of Science in Engineering (M.S.)

The Henry M. Rowan College of Engineering offers a general Master of Science in Engineering that allows students an opportunity to expand their skill sets in advanced topics of interest, with content that can span across all engineering disciplines and that is tailored to the student's specific professional goals.

Program Requirements

Required Courses 9 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S. H.
MATH 01515	Engineering Applications of Analysis (or equivalent determined in consultation with Academic Advisor)	3
Business course	*Choose one course from among the following*	3
ENT 06506	Corporate Entrepreneurship and New Venture Development	3
EM 01501	Engineering Economics	3
EM 01511	Strategic Risk Management	3
EM 01512	Quality in Engineering Management	3
EM 01513	Engineering Decisions	3
EM 01541	Engineering Law and Ethics	3
MGT 06510	Strategic Engineering Management	3
MGT 06666	Managing Engineering Teams	3
MGT 06677	Management Skills for Engineers	3
MIS 02526	Project Management for Engineers	3
Engineering Computation Course	*Approved computation courses are indicated in the respective disciplinary concentrations to follow with an asterisk. Choose one course from among these or select a computation intensive Computer Science course with Academic Advisor approval. Note: This course will be taken in addition to the 12-21 s.h. of Specialized Program Coursework.*	3

Required Specialized Courses 21 s.h.

A student may take any graduate level course offered in the Henry M. Rowan College Engineering, at Rowan University, or elsewhere subject to his/her advisor's and home department head's/chair's approval.

Total Required Credits for the Program 30 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and Thesis Requirements

Thesis Track: The thesis option requires the completion of 30 semester hours, 6-9 of which are in thesis research/engineering project.

Non-Thesis Track: The non-thesis option requires the completion of 30 semester hours of coursework.

Minimum Required Grades and Cumulative GPA

The Master of Science in Engineering is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
Nidhal Carla Bouaynaya, Ph.D.
Associate Dean for Research and Graduate Studies
Engineering Hall
856.256.5363
bouaynaya@rowan.edu

Master of Science in Biomedical Engineering (M.S.)

The Master of Science in Biomedical Engineering program at Rowan University effectively prepares individuals to respond to the changing needs of engineers today. This program provides students with the necessary knowledge, skill set, and training to effectively contribute to the engineering workforce. Students have access to higher level courses leading to a graduate degree and are involved in professional development opportunities which increase the breadth of understanding and application of engineering principles.

The Master of Science in Biomedical Engineering is a research-based degree, and additional graduate-level Biomedical Engineering coursework gives students an opportunity to expand their skill set in advanced topics of interest. Advanced topics include Biomaterials Engineering, Tissue Engineering and Regenerative Medicine, Bioinstrumentation, Biomechanics and Mechanobiology, Immunoengineering and other emerging areas. A novel research project completed under the mentorship of a faculty advisor and culminating in a Thesis, requires students to effectively apply engineering principles to solve a contemporary biomedical problem.

Program Requirements

The Rowan University Master of Science in Biomedical Engineering requires the completion of 30 hours of graduate level coursework and the successful completion and defense of a Master's Thesis.

Coursework The following courses make up the Master of Science in Biomedical Engineering curriculum.

- **Biomedical Engineering Core Courses:** Minimum of 12 s.h. (chosen in consult with advisor)
- **Elective Courses:** 9-12 s.h. (chosen in consult with advisor, a maximum of 3 s.h. of Business Courses may be counted toward Elective Courses)
- **Research Credits:** 6-9 s.h.

Biomedical Engineering Core Courses 12 s.h.

Students must choose 12 s.h. from the following bank of courses. An advanced mathematics course is required.

Course #	Course Title	S. H.
MATH 01515	Engineering Applications of Analysis	3
BME 11610	Biological Imaging	3
BME 11611	Biological Transport Phenomena	3
BME 11550	Advanced Biocompatibility and Immunoengineering	3
BME 11573	Biomaterials Engineering	3
BIOL 14540	Intro to Biochemistry	3
CHE 06586	Advanced Engineering Thermodynamics	3
MBS 43751	Fundamentals of Biochemistry and Molecular Biology I	3
MBS 43752	Fundamentals of Cell Biology II	3
BME 11551	Advanced Mechanobiology	3
BME 11554	Advanced Stem Cell Engineering	3
BME 11573	Biomaterials Engineering	3
MATH 03501	Mathematical Modeling for Biological Systems	3
MATH 03511	Operations Research I	3
MATH 03512	Operations Research II	3
MATH 03525	Partial Differential Equations in Biomathematics	3
	Another equivalent course determined in consult with advisor	3

Biomedical Engineering Elective Courses 9-12 s.h.

Students must choose 9-12 s.h. from the following bank of courses in consultation with their advisor. Any Core Courses in excess of 12 credits may be counted as Electives. The following list of concentration courses is not limiting; additional courses may be approved by the academic advisor.

Course #	Course Title	S. H.
BME 11552	Advanced Cell Bioelectricity	3
BME 11553	Regulatory Strategies in Biomedical Engineering	3
BME 11555	Fundamentals of Synthetic Biology	3
BME 11556	Advanced Nanoparticle Design and Engineering	3
BME 11568	Advanced Phenomena in Biomaterials Science	3
BME 11590	Orthopedic Engineering	3
BME 11590	Robotics and Image Guided Surgery	3
BME 11602	Writing and Winning Grant Proposals in the Biomedical Field	3
ENGR 01510	Finite Element Analysis	3
ENGR 01511	Engineering Optimization	3
ENGR 01512	Principles of Nanotechnology	3
CEE 08573	Advanced Structural Analysis	3
CEE 08675	Fracture Mechanics	3
CHE 06518	Polymer Engineering	3

CHE 06571	Biomedical Control Systems	3
CHE 06572	Biomedical Process Eng.	3
CHE 06576	Bioseparation Processes I	3
CHE 06578	Tissue Engineering	3
CHE 06584	Controlled Release Theory	3
CHEM 08505	Advanced Biophysical Chemistry	3
ME 10505	Mechanics of Composites	3
ME 10506	Computational Material Science	3
ME 10522	Computational Fluid Dynamics	3
ME 10550	Advanced Solid Mechanics 3	3
ME 10570	Principles in Biomechanics	3
MATH 01505	Probability and Mathematical Statistics	3
MATH 01512	Complex Analysis I	3
MATH 01521	Nonlinear Differential Equations	3
MATH 03550	Topics in Discrete Mathematics	3
MATH 03610	Applied Statistical Epidemiology	3
MATH 03611	Special Topics in Biomathematics	3
STAT 02510	Introduction to Statistical Data Analysis	3
STAT 02525	Design and Analysis of Experiments	3

Approved Business Courses 3 s.h.

Limit of 3 s.h. may count toward the Biomedical Engineering Technical Elective requirement.

Course #	Course Title	S. H.
ENT 06504	Tech Commercialization/Strategic Project-Based Experience	3
ENT 06506	Corporate Entrepreneurship and New Venture Development	3
EM 01501	Engineering Economics	3
EM 01511	Strategic Risk Management	3
EM 01512	Quality in Engineering Management	3
EM 01513	Engineering Decisions	3
EM 01541	Engineering Law and Ethics	3
ME 10543	Advanced Design for X	3
MGT 06510	Strategic Engineering Management	3
MGT 06666	Managing Engineering Teams	3
MGT 06667	Management Skills for Engineers	3
MIS 02526	Project Management for Engineers	3

Biomedical Engineering Research Courses 6-9 s.h.

Research hours are credited for laboratory research leading to a Master's Thesis.

Course #	Course Title	S. H.
ENGR 01599	Masters Research	6-9

Total Required Credits for the Program 30 s.h.

Foundation Courses

The following undergraduate courses are required:

- For applicants with undergraduate majors that are not Biomedical Engineering or a closely related field, undergraduate courses may be required during matriculation.
- The following undergraduate courses are strongly recommended: Chemistry I, Physics I, Calculus I, II, and III, Linear Algebra, and Differential Equations.

Graduation/Exit, Benchmark, and Thesis Requirements

Student must successfully complete and defend a Master's thesis.

Minimum Required Grades and Cumulative GPA

The Master of Science in Biomedical Engineering is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Graduate Program Chair Contact Information
Vince Beachley
Engineering Hall
856.256.5329
beachley@rowan.edu

Department Head Contact Information
Mark Byrne
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856.256.5773
byrnem@rowan.edu

Master of Science in Chemical Engineering (M.S.)

The Master of Science in Chemical Engineering program emphasizes advanced chemical engineering skills, project management skills, engineering design, and fundamental and applied research, all of which prepares students and working engineers for successful careers in high-tech fields. This program includes the following focus areas: additive manufacturing; biochemical engineering; catalysis; crystallization kinetics and processes; experimental design and data analysis; green engineering; lean manufacturing; membrane separations; pharmaceutical and food processing technology; polymers and polymer composites; process design and optimization; reaction engineering; social life cycle analyses; sustainable design; tissue engineering.

Program Requirements

Required Courses 9 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S. H.
MATH 01515	Engineering Applications of Analysis (or equivalent determined in consultation with Academic Advisor)	3
Business course	*Choose one course from among the following*	3
ENT 06506	Corporate Entrepreneurship and New Venture Development	3
EM 01501	Engineering Economics	3
EM 01511	Strategic Risk Management	3
EM 01512	Quality in Engineering Management	3
EM 01513	Engineering Decisions	3
EM 01541	Engineering Law and Ethics	3
MGT 06510	Strategic Engineering Management	3
MGT 06666	Managing Engineering Teams	3
MGT 06677	Management Skills for Engineers	3
MIS 02526	Project Management for Engineers	3
Engineering Computation Course	*Approved computation courses are indicated below with an asterisk. Choose one course from among these. Note: This course will be taken in addition to the 12-21 s.h. of Specialized Program Coursework.*	3

Required Specialized Courses 12–15 s.h.

Choose from the graduate level electives offered by the Chemical Engineering program, with approval of the Academic Advisor. The eligible courses include, but are not limited to the following.:

Course #	Course Title	S. H.
CHE 06502	Special Topics in Chemical Engineering	3
CHE 06506	Process Heat Transfer	3
CHE 06508	Membrane Process Technology	3
CHE 06510	Biochemical Engineering	3
CHE 06512	Safety in the Process Industries	3
CHE 06514	Transport Phenomena for Engineers*	3
CHE 06515	Advanced Reactor Design*	3
CHE 06516	Advanced Separation Process Technology*	3
CHE 06518	Polymer Engineering	3
CHE 06520	Green Engineering Design in the Chemical Industry	3
CHE 06528	Fluid Flow Applications in Processing and Manufacturing*	3
CHE 06568	Electrochemical Engineering	3
CHE 06570	Air Pollution Control	3
CHE 06571	Biomedical Control Systems	3
CHE 06572	Biomedical Process Engineering	3
CHE 06574	Advances in Particle Technology	3
CHE 06576	Bioseparation Processes	3
CHE 06577	Advanced Engineering Process Analysis & Experimental Design*	3
CHE 06578	Tissue Engineering	3
CHE 06579	Industrial Process Pathways	3
CHE 06580	Optimization of Engineering Projects	3

CHE 06581	Advanced Process Analysis*	3
CHE 06582	Food Engineering Systems	3
CHE 06584	Controlled Release Theory	3
CHE 06586	Advanced Engineering Thermodynamics*	3
Required Thesis/Project Courses		6–9 s.h.
Course #	**Course Title**	**S. H.**
ENGR 01599	Masters Research	6-9
Total Required Credits for the Program		30 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and Thesis Requirements

Thesis Research/Engineering Project. (Students will register for Masters Research (see above) credit hours totaling between 6-9 s.h. Please discuss with your Academic Advisor.)

Minimum Required Grades and Cumulative GPA

The Master of Science in Chemical Engineering is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
James Newell
Rowan Hall
856.256.5361
newell@rowan.edu

Master of Science in Civil & Environmental Engineering (M.S.)

The Civil & Environmental Engineering program allows students to develop an interdisciplinary focus through their coursework and thesis topic. Graduate students work with faculty with expertise in transportation, geo-technology, structures, water resources, and the environment. Interdisciplinary areas include mechanics and materials, and sustainability. This program also includes the following focus areas: Mechanics and Materials; Sustainability; and Transportation Engineering.

Program Requirements

Required Courses 9 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S. H.
MATH 01515	Engineering Applications of Analysis (or equivalent determined in consultation with Academic Advisor)	3
Business course	*Choose one course from among the following*	3
ENT 06506	Corporate Entrepreneurship and New Venture Development	3
EM 01501	Engineering Economics	3
EM 01511	Strategic Risk Management	3
EM 01512	Quality in Engineering Management	3
EM 01513	Engineering Decisions	3
EM 01541	Engineering Law and Ethics	3
MGT 06510	Strategic Engineering Management	3
MGT 06666	Managing Engineering Teams	3
MGT 06677	Management Skills for Engineers	3
MIS 02526	Project Management for Engineers	3
Engineering Computation Course	*Students may choose from the courses indicated below or select a computation-intensive CS or CEE course as approved by the academic advisor. Note: This course will count towards the total 30 s.h. required for graduation.*	3

Required Specialized Program Courses 12–15 s.h.

Choose from the following. The eligible courses include, but are not limited to the following. (Please note that not all courses are offered on a regular basis and should be chosen in consultation with the advisor.) Additional CEE085XX courses are listed in the course descriptions at the back of this catalog.:

Course #	Course Title	S. H.
CEE 08504	Engineering Estimating	3

CEE 08512	Advanced Environmental Treatment Process	3
CEE 08522	Site Remediation Engineering	3
CEE 08531	Solid/Hazardous Water Management	3
CEE 08532	Pollutant Fate & Transport	3
CEE 08533	Integrated Solid Waste Management	3
CEE 08541	Advanced Surface Hydrology	3
CEE 08543	Advanced Water Resources	3
CEE 08544	Hydraulic Design	3
CEE 08545	Environmental Fluid Mechanics	3
CEE 08552	Foundation Engineering	3
CEE 08553	Earth Retaining Systems	3
CEE 08562	Advanced Transportation	3
CEE 08564	Design Elements Transport Engineering	3
CEE 08566	Transportation System Modeling	3
CEE 08573	Advanced Structural Analysis	3
CEE 08574	Advanced Structural Mechanics	3
CEE 08575	Advanced Fatigue and Fracture	3
CEE 08583	Advanced Steel Design	3
CEE 08584	Prestressed Concrete	3
CEE 08585	Advanced Reinforced Concrete	3
CEE 08586	Bridge Engineering	3
CEE 08675	Fracture Mechanics	3
ENGR 01510	Finite Element Analysis	3
ENGR 01580	Advanced Viscoelasticity	3
CEE 08583	Advanced Steel Design	3
CEE 08603	Selected or Special Topics	3
Required Thesis/Project Courses		6–9 s.h.
Course #	**Course Title**	**S. H.**
ENGR 01599	Masters Research	6-9
Total Required Credits for the Program		30 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and Thesis Requirements

Thesis Research/Engineering Project. (Students will register for Masters Research (see above) credit hours totaling between 6-9 s.h. Please discuss with your Academic Advisor.)

Minimum Required Grades and Cumulative GPA

The Master of Science in Civil & Environmental Engineering is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information

Yusuf Mehta, Ph.D., P.E.
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856.256.5327
mehta@rowan.edu

Master of Science in Electrical and Computer Engineering (M.S.)

The Electrical and Computer Engineering program provides students an opportunity to expand their skill sets in advanced and emerging topics of interest. The program also provides in-depth specialization in several areas, such as signal & image processing, computational intelligence and machine learning, power systems and renewable energy, discrete event systems, and virtual reality systems. Thesis and non-thesis (course-only) options are available, both of which require a total of 30 credits. For the thesis option, 9 of the 30 credits come from original research that culminates in a thesis. For the non-thesis option, all 30 credits come from (ten) courses.

Program Requirements

Required Courses 9 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S. H.
An approved graduate-level Math course	Math intensive course in Math or ECE dept. (approved by academic advisor)	3
Business course	*Choose one course from among the following*	3
ENT 06506	Corporate Entrepreneurship and New Venture Development	3
EM 01501	Engineering Economics	3
EM 01511	Strategic Risk Management	3
EM 01512	Quality in Engineering Management	3
EM 01513	Engineering Decisions	3
EM 01541	Engineering Law and Ethics	3
MGT 06510	Strategic Engineering Management	3
MGT 06666	Managing Engineering Teams	3
MGT 06677	Management Skills for Engineers	3
MIS 02526	Project Management for Engineers	3
Engineering Computation Course	*Selected approved computation courses are indicated below with an asterisk. Students may choose from the courses indicated below or may select a computation intensive CS or ECE course as approved by the academic advisor. Note: This course will be taken in addition to the 12-21 s.h. of Specialized Program Coursework.*	3

Required Concentration Elective Courses 12–21 s.h.

Choose 21 s.h. (non-thesis track) or 12-15 s.h. (thesis track) of approved electives in consultation with the Academic Advisor. The eligible courses include, but are not limited to the following:

Course #	Course Title	S. H.
ECE 09504	Special Topics in Electrical and Computer Engineering^	3
ECE 09509	Virtual Reality Systems	3
ECE 09510	Advanced Alternate Energy Systems	3
ECE 09515	Emerging Electricity Market	3
ECE 09521	Fundamentals in Systems Engineering	3
ECE 09523	Advanced Radar Systems	3
ECE 09524	Advanced War Gaming and C4ISR	3
ECE 09525	Advanced Command and Control	3
ECE 09526	Advanced Weapon Systems	3
ECE 09527	Advanced Model Based Systems Engineering	3
ECE 09531	Advanced Optical Fiber Communications	3
ECE 09551	Digital Signal Processing	3
ECE 09552	Digital Image Processing	3
ECE 09553	Digital Speech Processing	3
ECE 09554	Theory and Engineering Application of Wavelets	3
ECE 09555	Advanced Topics in Pattern Recognition / Machine Learning*	3
ECE 09556	Advanced Embedded Software Design*	3
ECE 09557	Advanced Biometric Systems	3
ECE 09558	Reinforcement Learning*	3
ECE 09560	Artificial Neural Networks*	3
ECE 09566	Advanced Topics in Systems, Devices, and Algorithms in Bioinformatics	3
ECE 09568	Discrete Event Systems	3
ECE 09569	System-on-Chip Verification	3
ECE 09571	Instrumentation	3
ECE 09572	Advanced Smart Grid	3
ECE 09573	Advanced Smart Sensors	3

ECE 09582	Memristors and Nanoelectronic VLSI	3
ECE 09585	Advanced Engineering Cyber Security	3
ECE 09586	Advanced Portable Platform Development*	3
ECE 09590	Advanced Emerging Topics in Computer Engineering	3
ECE 09595	Advanced Emerging Topics in Comp. Intelligence & Machine Learning*	3
ECE 09651	Estimation and Detection Theory	3
ECE 09655	Advanced Computational Intelligence and Machine Learning*	3
ENGR 01510	Finite Element Analysis	3
ENGR 01511	Engineering Optimization	3
Required Thesis (for thesis track students only)		9 s.h.
Course #	**Course Title**	**S. H.**
ENGR 01599	Master's Research and Thesis	9
Total Required Credits for the Program		30 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and Thesis Requirements

Thesis Research. (Students will register for Master's Research and Thesis (see above) credit hours totaling 9 s.h. Please discuss with your Academic Advisor.)

Minimum Required Grades and Cumulative GPA

The Master of Science in Electrical and Computer Engineering is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information

Jie Li, Ph.D.
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Master of Science in Mechanical Engineering (M.S.)

The Mechanical Engineering program permits students to deeply explore engineering design and analysis. The interdisciplinary nature of the program provides students with an opportunity to work on exciting research areas at the leading edge of technology. This program includes focus areas in Bioengineering, Mechanics, Materials, Nanotechnology, Devices, and Systems Engineering.

Program Requirements

Required Courses		9 s.h.
(s.h.: semester hours/credit hours)		
Course #	**Course Title**	**S. H.**
Applied Mathematics Course	*Choose one course from among the following or equivalent determined in consultation with Academic Advisor.*	3
ENGR 01511	Engineering Optimization	3
MATH 01502	Linear Algebra and Matrix Theory	3
MATH 01505	Probability and Mathematical Statistics I	3
MATH 01515	Engineering Applications of Analysis	3
MATH 01529	Numerical Analysis	3
MATH 03511	Operations Research I	3
Business Course	*Choose one course from among the following.*	3
ENT 06506	Corporate Entrepreneurship and New Venture Development	3
EM 01501	Engineering Economics	3
EM 01511	Strategic Risk Management	3
EM 01512	Quality in Engineering Management	3
EM 01513	Engineering Decisions	3
EM 01541	Engineering Law and Ethics	3
MGT 06510	Strategic Engineering Management	3
MGT 06666	Managing Engineering Teams	3
MGT 06677	Management Skills for Engineers	3
MIS 02526	Project Management for Engineers	3

Engineering Computation Course		3

Approved computation courses are indicated below with an asterisk. Choose one course from among these. Note: This course will be taken in addition to the 12-21 s.h. of Specialized Program Coursework.

Required Specialized Program Courses 12–21 s.h.

Choose from the following options.

Course #	Course Title	S. H.
ENGR 10513	Renewable Energy: Photovoltaics and Energy Harvesting	3
ENGR 01512	Principles of Nanotechnology	3
ENGR 01510	Finite Element Analysis	3
ENGR 01511	Engineering Optimization*	3
MATH 03511	Operations Research I	3
ME 10513	Principles in Advanced Heat and Mass Transfer	3
ME 10501	Computer Integrated Manufacturing and Automation*	3
ME 10505	Special Topics in Mechanical Engineering	3
ME 10506	Computational Materials Science*	3
ME 10511	Combustion	3
ME 10512	Rocket Propulsion	3
ME 10514	Energy Conversion Systems	3
ME 10521	Gas Dynamics	3
ME 10522	Computational Fluid Dynamics*	3
ME 10540	Advanced Manufacturing	3
ME 10541	Advanced Mechanism Design	3
ME 10542	Advanced Mechatronics*	3
ME 10543	Advanced Design for X	3
ME 10544	Automotive Engineering	3
ME 10550	Advanced Solid Mechanics	3
ME 10551	Mechanics of Continuous Media	3
ME 10552	Structural Acoustics	3
ME 10553	Analytical Dynamics	3
ME 10554	Elastic Stability of Structures	3
ME 10560	Composite Materials	3
ME 10562	FEA with ANSYS*	3
ME 10570	Principles in Biomechanics	3
ME 10580	Aerospace Vehicles	3
ME 10582	Flight Dynamics	3
ME 10571	Principles of Biotransport	3

Required Thesis/Project Courses *if thesis track is selected* 6–9 s.h.

Course #	Course Title	S. H.
ENGR 01599	Master's Research and Thesis	6-9

Total Required Credits for the Program 30 s.h.

Foundation Courses

The following undergraduate courses or their substantial equivalents must be successfully completed at an accredited institution: Chemistry I, Physics I, Calculus I, II, and III, Linear Algebra, and Differential Equations. Additional foundation courses may be required as conditions of program admission.

Graduation/Exit, Benchmark, and Thesis Requirements

If thesis track is selected, students will register for 6-9 s.h. of Master's Research and must successfully complete and defend the Master's Thesis.

Minimum Required Grades and Cumulative GPA

The Master of Science in Mechanical Engineering is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
Francis Haas
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Certificate of Graduate Study (Non-degree)

Certificate of Graduate Study in Combat Systems Engineering (COGS)

The immediate region surrounding Rowan University is home to a large number of companies and agencies that serve the defense industry. Collectively, this industry hires more of the graduating Rowan Electrical and Computer Engineering (ECE) students than any other industry. The representatives of this industry have expressed a desire to provide additional knowledge and skill sets – specifically as they relate to combat systems – that they would prefer their employees to have at the time of hiring.

The Certificate of Graduate Study (COGS) in Combat Systems Engineering is a program designed to meet this need and consists of four (4) three-credit graduate level courses. The program allows students to increase the breadth and depth of their knowledge of complex systems with particular applications to combat systems and defense technologies. Completion of this COGS will give students the necessary tools required by the defense industry in analysis, design, evaluation, and validation of combat systems. Students who complete this COGS will be marketable and ready to be imminently employed at graduation by the defense industry companies, not just in our immediate geographic area, but nationwide as well. This program is jointly developed by Rowan ECE and the defense industry representatives. All courses in this COGS are taught by highly qualified faculty, including subject matter experts from the defense industry who have significant industrial experience and bring unique industry perspectives.

The primary audience of this COGS are:

- Students with Bachelor of Science Degree in Electrical Engineering, Computer Engineering, Systems Engineering, or related engineering fields, who would like to focus on the combat systems engineering for employment in the defense industry, but not necessarily interested in completing a separate, stand-alone Master of Science degree program
- Current employees in the defense industry, possibly newly hired, who may need the additional knowledge and skills set in combat systems engineering.

The courses in this COGS are also available to students who would like to complete a M.S. in ECE degree.

Program Requirements

Required Courses

(s.h.: semester hours/credit hours)

Course #	Course Title	S. H.
ECE 09523	Advanced Radar Systems	3
ECE 09524	Advanced War Gaming and C4ISR	3
ECE 09525	Advanced Command and Control	3
ECE 09526	Advanced Weapon Systems	3
Total Required Credits		12 s.h.

Foundation Courses

- MATH 01230 Calculus III
- ECE 09321 Systems and Control I (or similar / relevant work experience)
- ECE 09341 Signals & Systems (or similar / relevant work experience)

Graduation/Exit, Benchmark, and Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The COGS in Combat Systems Engineering is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
Robi Polikar
Department Head, Electrical and Computer Engineering
Engineering Hall
856.256.5372
polikar@rowan.edu

Certificate of Graduate Study in Construction Management (COGS)

The Certificate of Graduate Study (COGS) in Construction Management is a program designed to meet the needs of individuals who are established in careers and are seeking professional growth and advancement within their professions. The engineering management approach adapts special management techniques with the purpose of obtaining better control and use of existing resources. It is intended for civil engineering, engineering technology, and construction management graduates who plan to enhance their prospects for success and move into management. New Jersey professional engineers are required to complete continuing education every two years. This will provide that service, as well as meeting education requirements for professional engineering license.

The courses in this certificate are also available to students who would like to complete a Master in Engineering Management (M.E.M.) degree.

Program Requirements

Required Courses

(s.h.: semester hours/credit hours)

Course #	Course Title	S. H.
CEE 08504	Engineering Estimating	3
EM 01521	Construction Management	3
EM 01522	Construction Scheduling	3
EM 01523	Cost Engineering	3
Total Required Credits		12 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The COGS in Construction Management is a Category 3 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information

Steven Chin, Ph.D., P.E.
Vice Dean
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856.256.5300
chin@rowan.edu

Certificate of Graduate Study in Engineering Analytics and Quality Control (COGS)

The Certificate of Graduate Study (COGS) in Engineering Analytics and Quality Control is a program designed to prepare students to be industry-ready contributors in any process engineering quality assessment, improvement and control function. Completion of the certificate will enhance participants' marketability and ease their entry into graduate engineering programs.

The courses in this certificate are also available to students who would like to complete a master's degree in engineering management (M.E.M.).

Program Requirements

Required Courses

(s.h.: semester hours/credit hours)

Course #	Course Title	S. H.
CHE 06577	Advanced Engineering Process Analysis and Experimental Design	3
CHE 06640	Engineering Process Analysis	3
CHE 06641	Engineering Statistical Process Control	3
CHE 06642	Quality Control Methods and Metrics	3
Total Required Credits		12 s.h.

Foundation Courses
None

Graduation/Exit, Benchmark, and Thesis Requirements
None

Minimum Required Grades and Cumulative GPA
The COGS in Engineering Analytics and Quality Control is a Category 2 program.
For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
Zenaida Otero Gephardt, Ph.D., P.E. (she/her)
Professor
Rowan Hall
856.256.5314
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Certificate of Graduate Study in Environmental Engineering (COGS)

The Certificate of Graduate Study (COGS) in Environmental Engineering is designed for professionals in the area to obtain the advanced education and skills needed for professional growth. The COGS will be a particular boost to professionals in the field of Environmental Engineering that have worked for several years and have obtained their professional license or are preparing to sit for the Professional Engineering Exam, but have not yet started a MS degree.

Program Requirements

Required Courses 6 s.h.

Choose 6 s.h. from the following options.

(s.h.: semester hours/credit hours)

Course #	Course Title	S. H.
CEE 08512	Advanced Environmental Treatment Process	3
CEE 08522	Site Remediation Engineering	3
CEE 08531	Solid/Hazardous Water Management	3
CEE 08532	Pollutant Fate & Transport	3
CEE 08533	Integrated Solid Waste Management	3

Elective Courses 6 s.h.

Choose 6 s.h. from the following options.

Course #	Course Title	S.H.
CEE 08543	Advanced Water Resources	3
CEE 08544	Hydraulic Design	3
CEE 08545	Environmental Fluid Mechanics	3
CEE 08546	River Engineering	3
CEE 08547	Watershed Engineering	3
CEE 08548	Water and Environmental Monitoring	3
EVSC 04510	Earth's Environment and Natural Systems	3
EVSC 04511	The Science of Climate Change	3
EVSC 05550	Introduction to Green Energy	3
EVSC 05560	Industrial Health and Safety	3
EVSC 05612	Applied Environmental Science Graduate Clinic	3
EVSC 05612	Environmental Support Systems: Fresh Water	3
EVSC 05613	Environmental Support Systems: Native Plants in the Landscape	3
EVSC 05610	Environmental Support Systems: Soils	3
EVSC 05605	Case Studies in Applied Environmental Science	3
EVSC 05660	Risk Assessment	3
EVSC 05630	Communicating Environmental Science	3
	Additional courses with permission of graduate advisor	3

Total Required Credits 12 s.h.

Foundation Courses
None

Graduation/Exit, Benchmark, and Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The COGS in Environmental Engineering is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information

Yusuf Mehta, Ph.D., P.E.
Rowan Hall
856.256.5327
mehta@rowan.edu

Certificate of Graduate Study in Machine Learning (COGS)

The Certificate of Graduate Study (COGS) in Machine Learning is a program designed to provide a breadth and depth to students who want to specialize in one of the fastest growing fields of all sciences and engineering.

The Machine Learning COGS will provide breadth and depth in theoretical foundations of machine learning, as well as a year-long practical hands-on real-world project experience.

The completion of this COGS will provide students with the necessary tools to start a career in machine learning as it applies to engineering and/or continue their education through graduate programs.

Program Requirements

Required Courses 6 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S. H.
ECE 09555	Advanced Topics in Pattern Recognition	3
ECE 09595	Advanced Emerging Topics in Computational Intelligence, Machine Learning and Data Mining	3
or ECE 09558	Reinforcement Learning	3

Elective Courses 6 s.h.

Choose 6 s.h.

Course #	Course Title	S.H.
ECE 09560	Artificial Neural Networks	3
ECE 09566	Systems, Devices and Algorithms in Bioinformatics	3
ECE 09595	Advanced Emerging Topics in Computational Intelligence, Machine Learning and Data Mining*	3
or ECE 09558	Reinforcement Learning*	3
ECE 09655	Advanced Computational Intelligence and Machine Learning	3
ENGR 01511	Engineering Optimization	3
ENGR 01599	Master's Thesis Research	3
or ENGR 01799	Doctoral Research	3

* Course can be taken as an elective if not already taken as one of the required courses. Contact the program coordinator for additional details.

** Permission of instructor is required for non-engineering students. Contact the program coordinator for additional details.

Total Required Credits 12 s.h.

Foundation Courses

Please contact program coordinator for additional details.

Graduation/Exit, Benchmark, and Thesis Requirements

Complete the minimum 12 credits from the appropriate categories listed above.

Minimum Required Grades and Cumulative GPA

The COGS in Machine Learning is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
Jie Li, Ph.D.
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lijie@rowan.edu

Certificate of Graduate Study in Project Management (COGS)

The Certificate of Graduate Study (COGS) in Project Management is a program designed to emphasize engineering management from the engineering perspective and offers students a viable and desirable lifetime opportunity to professionals practicing in engineering applications. The completion of the certificate will enhance participants' marketability and ease the entry into a graduate or doctoral engineering program.

The courses in this certificate are also available to students who would like to complete a Master in Engineering Management (M.E.M.) degree.

Program Requirements

Required Courses

(s.h.: semester hours/credit hours)

Course #	Course Title	S. H.
EM 01513	Engineering Decision Making	3
EM 01542	Facilities Management	3
MGT 06666	Managing Engineering Teams	3
MGT 06677	Management Skills for Engineers	3
Total Required Credits		12 s.h.

Foundation Courses
None

Graduation/Exit, Benchmark, and Thesis Requirements
None

Minimum Required Grades and Cumulative GPA
The COGS in Project Management is a Category 2 program.
For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
Steven Chin, Ph.D., P.E.
Vice Dean
Engineering Hall
856.256.5300
chin@rowan.edu

Certificate of Graduate Study in Transportation Engineering (COGS)

The Certificate of Graduate Study (COGS) in Transportation Engineering is designed for professionals in the area to obtain the advanced education and skills needed for professional growth. The COGS will be a particular boost to professionals in the field of Environmental Engineering that have worked for several years and have obtained their professional license or are preparing to sit for the Professional Engineering Exam, but have not yet started a MS degree.

Program Requirements

Required Courses 12 s.h.

Choose four (4) courses from the following list.

(s.h.: semester hours/credit hours)

Course #	Course Title	S. H.
CEE 08562	Advanced Transportation Engineering	3
CEE 08564	Design Elements Transport Engineering	3
CEE 08565	Advanced Pavement Analysis and Evaluation	3

CEE 08566	Transportation Systems Modeling	3
CEE 08568	Intelligent Transportation System	3
CEE 08577	Transportation Safety System	3
CEE 08588	Advanced Pavement Rehabilitation Methods	3
ENGR 01569	Connected Vehicle Technology	3
ENGR 01580	Advanced Viscoelasticity	3
	Additional graduate-level course(s) with approval of graduate advisor	
Total Required Credits		12 s.h.

Foundation Courses
None

Graduation/Exit, Benchmark, and Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The COGS in Transportation Engineering is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
Yusuf Mehta, Ph.D., P.E.
Rowan Hall
856.256.5327
mehta@rowan.edu

College of Performing Arts

Richard Dammers
Dean
Wilson Hall
856.256.4551
dammers@rowan.edu

Melanie Stewart
Associate Dean
Wilson Hall
856.256.4548
stewartm@rowan.edu

History

The College of Performing Arts (formerly, the School of Fine and Performing Arts at Glassboro State College) was founded in 1971. In 1997, during the transition from Glassboro State College to Rowan University, the School became the College of Fine and Performing Arts. The College was renamed the College of Performing Arts in 2012. Today, the College is comprised of the departments of Music (including the Maynard Ferguson Institute of Jazz Studies) and Theatre & Dance. The College offers baccalaureate degrees in the fields of Dance, Music, Music Industry, Theatre, a post-baccalaureate certificate in Music Therapy, and graduate degrees in Music and Arts Administration.

In addition to more than 250 performances on campus each year, the faculty, staff, and students collaborate in scholarly and artistic activities at the international, national, and regional levels.

Mission

The College of Performing Arts at Rowan University develops artists and audiences of the future and promotes the arts as vital to humanity. Through rigorous professional preparation and liberal arts programs, the College educates students in the disciplines of dance, music, and theatre and challenges them to develop a conceptual, critical and creative perspective within the contemporary world. The College creates, illuminates, and inspires audiences and community through public performances and artistic practice for the university and broader region.

Accreditation

Specialized, national arts accreditation has been granted by the following organizations:

- The National Association of Schools of Music
- The National Association of Schools of Theatre

The College offers rigorous professional and liberal degree programs that develop technical and creative abilities of the student to the highest level to prepare them for a wide range of careers in the contemporary market place and creative industries.

A program of study in the College can lead to:

- A professional career in the performing arts or music industry
- A teaching career in Dance, Music, or Theatre
- Graduate study in Music, Music Therapy, Music Education, or Arts Administration
- Other career options not tied fully to the performing arts, but which draw on the knowledge and rigor inherent in them

Central to a productive environment for the study of the arts is a vital community of arts professionals, including faculty and student artists, scholars, educators, and performers whose careers are dedicated to the creative pursuit and advancement of the performing arts and music industry, in terms of their own individual creation and, also, in relation to the audience. The performing arts faculty at Rowan consists of some of the finest arts professionals in the nation, all dedicated to fostering a creative, productive atmosphere in which all of the performing arts can flourish.

Departments

The College of Performing Arts houses the academic departments of Music and Theatre & Dance.

Programs Offered

All programs offered are listed below in order of degree/program type and then in alphabetical order by program name. Details about each program are then listed within the catalog in the same order. For the most up-to-date information regarding mode of delivery options for your program of interest, please visit https://global.rowan.edu/programs.

MASTER'S DEGREES

Program Name	Format/Location	Program/Major Codes	Avail FT/PT	Total Credits
Master of Arts in Arts Administration	Hybrid	MA-ARTSADMIN/G010	Part-time	30
Master of Music		MM-MUSIC/G004	Both	
Concentration Name	**Format/Location**	**Concentration Code**		**Total Credits**
Composition	Face-to-Face/Glassboro	C002		33–40
Conducting	Face-to-Face/Glassboro	C016		34–40
Instrumental Performance	Face-to-Face/Glassboro	C017		34–38
Vocal Performance	Face-to-Face/Glassboro	C019		34–38
Master of Music Education	Online	MA-MUSICED/G006	Part-time	33

POST-BACCALAUREATE PROGRAMS (NON-DEGREE)

Program Name	Format/Location	Program/Major Codes	Avail FT/PT	Total Credits
Post-Baccalaureate Certificate in Music Therapy	Hybrid/Glassboro	CRT-MUSTHERO/9006	Part-time	38

Academic Program Policy Categories

For the purposes of both the Minimum Satisfactory Academic Progress policy and the Minimum Graduation Requirements policy, post-baccalaureate/graduate academic programs at Rowan University fall into one of three major categories which are identified by their grade requirements as outlined below. (See individual program descriptions for academic categories.)

Category 1: To maintain Minimum Satisfactory Academic Progress in and to successfully graduate from a Category 1 program students must:

- Earn no more than two total "B-" grades
- Earn no grades lower than a "B-"
- Earn an official cumulative GPA (according to matriculation level) of at least 3.000 on Rowan's 4.000 scale

Category 2: To maintain Minimum Satisfactory Academic Progress in and to successfully graduate from a Category 2 program students must:

- Earn no grades lower than a "B-"
- Earn an official cumulative GPA (according to matriculation level) of at least 3.000 on Rowan's 4.000 scale

Category 3: To maintain Minimum Satisfactory Academic Progress in and to successfully graduate from a Category 3 program students must:

- Earn no more than two total C grades of any combination of "C+" or "C." (C- grades are not acceptable.)
- Earn no grades lower than a "C"
- Earn an official cumulative GPA (according to matriculation level) of at least 3.000 on Rowan's 4.000 scale

Policy Prior to Fall 2013 Matriculation

The academic review and minimum graduation requirements review policies will be applied to Rowan graduate and post-baccalaureate students who matriculate beginning Fall 2013 or later; however, current students (those matriculated and active before Fall 2013) will be grandfathered under the prior policy/practice, whose grade and GPA requirements are the same as Academic Review Category 3.

Master's Degrees

Master of Arts in Arts Administration (M.A.)

The Master of Arts (M.A.) in Arts Administration will provide students with the business, marketing, and administrative skills needed to initiate their own performing arts organizations or to secure stable administrative positions in regional or national arts venues, institutions, or educational administration. This program provides vital, up-to-date strategies taught by industry professionals representing disciplines of visual arts, music, theatre, dance, entrepreneurship, and business. Students who graduate from this program will be prepared to pursue careers in theatre management, symphony orchestra management, or other administrative roles such as gallery directors, music producers, presenters, dance company managers, and cultural arts entrepreneurs.

Program Requirements

Required Courses 30 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
THD 07537	Advocacy and Arts Policy	3
THD 07530	Arts Administration Leadership	3
THD 07531	Producing & The Arts	3
THD 07532	Arts Planning: An Elegant Process	3
THD 07533	Audience Development	3
THD 07534	Education & Outreach Programs in the Arts	3
THD 07535	Curatorial Practice in the Arts	3
THD 07536	Fundraising & Development for the Arts	3
THD 07505	Independent Study in Graduate Arts Administration	3
or THD 07515	Internship in the Arts	
THD 07511	Production/Performance/Arts Administration Project	3

Total Required Credits for the Program 30 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and Thesis Requirements

THD 07511 - Production/Performance/Arts Administration Project

Minimum Required Grades and Cumulative GPA

The Master of Arts in Arts Administration is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
Victoria Dolceamore, Ed.D.
Wilson Hall
856.256.4015
dolceamore@rowan.edu

Master of Music Overview

The Master of Music program provides intensive experiences in performance, conducting, or composition as well as courses geared to enhance the student's knowledge and understanding of the literature of their area of concentration, and a greater understanding of music in general. The Master of Music program at Rowan University is for the aspiring musician who wishes to make a career as a jazz musician, classical performer, conductor, or composer or will continue their studies at the Ph.D. or M.A. level. Graduates of Rowan's Master of Music program have gone on to major doctoral programs, performing careers, arts leadership positions, and careers as college professors and public school teachers.

Master of Music Concentrations

The Master of Music program offers the degree with four concentrations as detailed below:

- Composition
- Conducting (Instrumental or Choral)
- Performance (Instrumental or Vocal)

Notes:

- Students will officially declare their concentration at the time of application during the audition.
- Concentration requirements may only be modified by permission of the program coordinator.

The Master of Music requires 32-40 semester hours depending upon the concentration selected at the time of application. The Master of Music degree at Rowan University is designed to be 4 semesters long.

Students will take Music Theory and Music History placement exams the first week of classes (not admission bearing).

Admissions

A performance audition or portfolio review is required for admission to the Master of Music program. Audition requirements for each instrument or area of concentration can be found at www.rowan.edu/music/auditions.

An appointment for audition will be scheduled once the candidate's application is complete. The auditions are scheduled on an individual basis according to the following procedures:

- **Voice, Instrument**: This audition can be taken during the academic year (September through April) by appointment.
- **Conducting**: If a candidate is invited to Phase 2 of the audition process, this audition must be scheduled during the academic year (October through April).
- **Composition**: The composition portfolio and accompanying materials can be submitted year round.

An audition can be scheduled by contacting Dr. Fabio Oliveira, Graduate Program Coordinator, at oliveira@rowan.edu .

For the most up-to-date information regarding admission requirements, entry points, and application deadlines, please visit https://global.rowan.edu/programs. Click on your program of interest to be connected to program and admission details.

Master of Music: Composition (M.M.)

Program Requirements

See the Master of Music Overview.

Required Courses 12 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
MUS 04560	Form and Analysis (Or Counterpoint if Form and Analysis was completed at the UG level)	3
MUS 04570	20th Century Literature & Techniques	3
MUSG 05547	Music & the Related Arts	3
SMED 32502	Teaching Music Theory	3

Required Concentration Courses

Group A 12–16 s.h.

Choose 12-16 s.h. from the following. Be sure to include at least one offering each of Composition I and one offering of Composition II.

Course #	Course Title	S.H.
MUS 10525	Graduate Music Composition I	4
MUS 10526	Graduate Music Composition II	4
MUS 10527	Graduate Music Composition I	6
MUS 10528	Graduate Music Composition II	6

Group B 2 s.h.

Choose 2 s.h. from the following (Course numbers rotate each semester.)

Course #	Course Title	S.H.
MUS 10537 - MUS 10540	Graduate Ensemble: Concert Choir	1
MUS 10541 - MUS 10544	Graduate Ensemble: Jazz Band	1
MUS 10545 - MUS 10548	Graduate Ensemble: Lab Band	1
MUS 10549 - MUS 10552	Graduate Ensemble: Orchestra	1
MUS 10553 - MUS 10556	Graduate Ensemble: Wind Ensemble	1
MUS 10569 - MUS 10572	Graduate Ensemble: Chamber Music	1
MUS 10576 - MUS 10579	Graduate Ensemble: Contemporary Music	1

Group C 2 s.h.

Choose 2 s.h. from the following.

Course #	Course Title	S.H.
MUS 10501	Graduate Secondary Applied Instrument I	2
MUS 10505	Graduate Secondary Applied Voice I	2

Elective Courses 5-8 s.h.

Choose courses from the following to total 5-8 semester hours.

Course #	Course Title	S.H.
MUS 04541	Jazz Piano (non-keyboard students)	1
MUS 04551	Piano Accompanying	1
MUS 04555	Counterpoint	3
MUS 04557	Advanced Orchestration	3
MUS 04561	Score Reading I	1
MUS 04562	Score Reading II	1
MUS 04565	Seminar in Band Conducting	3
MUSG 06503	Jazz History	3
MUSG 06506	Art Song Literature	3
MUSG 06509	String Instrument Literature	3
MUSG 06511	Survey of 20th Century Band Literature	3
MUSG 06542	Opera Literature	3
MUSG 06545	Development & Interpretation of Choral Literature	2
MUSG 06546	Development & Interpretation of Symphonic Literature	3
MUSG 06510	Keyboard Literature	3
SMED 32507	Piano Pedagogy	3

Total Required Credits for the Program 33–40 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and Thesis Requirements

- Culminating Experience (Recital)
- Successful completion of oral comprehensive exam

Minimum Required Grades and Cumulative GPA

The Master of Music is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information

Dr. Fabio Oliveira
Wilson Hall, Room 163
oliveira@rowan.edu

Master of Music: Conducting (Instrumental or Choral) (M.M.)

See the Master of Music Overview. The following three focus areas are available for a Master of Music in Conducting:

- Choral Conducting
- Orchestral Conducting
- Wind Conducting

Program Requirements

Required Courses 8 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
MUS 04560	Form & Analysis (Or Counterpoint if Form and Analysis was completed at the UG level)	3
MUS 04561	Score Reading I	1
MUS 04562	Score Reading II	1
MUSG 05547	Music & the Related Arts	3

Required Concentration Courses

Group A 12-16 s.h.

Choose 12-16 s.h. from the following.

Course #	Course Title	S.H.
MUS 10529	Graduate Conducting I	4
MUS 10530	Graduate Conducting II	4
MUS 10531	Graduate Conducting III	4
MUS 10532	Graduate Conducting IV	4
MUS 10533	Graduate Conducting I	6
MUS 10534	Graduate Conducting II	6

Group B 2-4 s.h.

Choose 2-4 s.h. from the following. (Course numbers rotate each semester.)

Course #	Course Title	S.H.
MUS 10537 - MUS 10540	Graduate Ensemble: Concert Choir	1
MUS 10541 - MUS 10544	Graduate Ensemble: Jazz Band	1
MUS 10545 - MUS 10548	Graduate Ensemble: Lab Band	1
MUS 10549 - MUS 10552	Graduate Ensemble: Orchestra	1
MUS 10553 - MUS 10556	Graduate Ensemble: Wind Ensemble	1
MUS 10561 - MUS 10564	Graduate Ensemble: Statesmen	1
MUS 10565 - MUS 10568	Graduate Ensemble: Women's Choir	1
MUS 10569 - MUS 10572	Graduate Ensemble: Chamber Music	1

Required Focus Area Courses 2-4 s.h.

Students select one focus area from the three below.

Choral Conducting Focus Area

Choose 9 s.h. from the following.

Course #	Course Title	S.H.
MUS 04514	Choral Procedures	2
MUSG 06542	Opera Literature	3
MUSG 06545	Development & Interpretation of Choral Literature	2
TBD	Select an approved French or Italian or German language course	3

Orchestral Conducting Focus Area

Choose 9 s.h. from the following.

Course #	Course Title	S.H.
MUS 04557	Advanced Orchestration	3
MUSG 06542	Opera Literature	3
MUSG 06546	Development & Interpretation of Symphonic Literature	3

Wind Conducting Focus Area

Choose 9 s.h. from the following.

Course #	Course Title	S.H.
MUS 04557	Advanced Orchestration	3
MUS 04565	Seminar in Band Conducting	3
MUSG 06511	Survey of 20th Century Band Literature	3

Elective Courses 3 s.h.

Choose 3 s.h. from the following.

Course #	Course Title	S.H.
MUS 04551	Piano Accompanying	1
MUSG 06503	Jazz History	3
MUSG 06506	Art Song Literature	3
MUSG 06509	String Instrument Literature	3
MUSG 06542	Opera Literature	3
MUSG 06545	Development & Interpretation of Choral Literature	2
MUSG 06546	Development & Interpretation of Symphonic Literature	3
MUSG 06510	Keyboard Literature	3
SMED 32507	Piano Pedagogy	3

Total Required Credits for the Program 34-40 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and Thesis Requirements

- Culminating Experience (Recital)
- Successful completion of oral comprehensive exam

Minimum Required Grades and Cumulative GPA

The Master of Music is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
Dr. Fabio Oliveira
Wilson Hall, Room 163
oliveira@rowan.edu

Master of Music: Performance (Instrumental or Vocal) (M.M.)

See the Master of Music Overview.

The following four focus areas are available for a Master of Music in Performance:

- Orchestral Instruments
- Guitar
- Keyboard
- Voice

Program Requirements

Required Courses 6 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
MUS 04560	Form and Analysis (Or Counterpoint if Form and Analysis was completed at the UG level)	3
MUSG 05547	Music and the Related Arts	3

Required Graduate Performance Music Courses 12–16 s.h.

Choose 12-16 s.h. from the following.

Course #	Course Title	S.H.
MUS 10509	Graduate Applied Instrument I	4
MUS 10510	Graduate Applied Instrument II	4
MUS 10511	Graduate Applied Instrument III	4

MUS 10512	Graduate Applied Instrument IV	4
MUS 10513	Graduate Applied Voice I	4
MUS 10514	Graduate Applied Voice II	4
MUS 10515	Graduate Applied Voice III	4
MUS 10516	Graduate Applied Voice IV	4
MUS 10517	Graduate Applied Instrument I	6
MUS 10518	Graduate Applied Instrument II	6
MUS 10519	Graduate Applied Instrument III	6
MUS 10520	Graduate Applied Instrument IV	6
MUS 10521	Graduate Applied Voice I	6
MUS 10522	Graduate Applied Voice II	6
MUS 10523	Graduate Applied Voice III	6
MUS 10524	Graduate Applied Voice IV	6

Required Concentration Courses 2–4 s.h.

Choose 2-4 s.h. from the following. (Course numbers rotate each semester.)

Course #	Course Title	S.H.
MUS 10537 - MUS 10540	Graduate Ensemble: Concert Choir	1
MUS 10541 - MUS 10544	Graduate Ensemble: Jazz Band	1
MUS 10545 - MUS 10548	Graduate Ensemble: Lab Band	1
MUS 10549 - MUS 10552	Graduate Ensemble: Orchestra	1
MUS 10553 - MUS 10556	Graduate Ensemble: Wind Ensemble	1
MUS 10557 - MUS 10560	Graduate Ensemble: Opera Company	1
MUS 10569 - MUS 10572	Graduate Ensemble: Chamber Music	1

Required Focus Area Courses 2–11 s.h.

Students select one focus area from the four below.

Orchestral Instruments Focus Area

Students in this focus area complete 2 s.h. as follows.

Course #	Course Title	S.H.
MUS 04536	Chamber Music I	1
MUS 04537	Chamber Music II	1

Guitar Focus Area

Students in this focus area complete 8 s.h. as follows.

Course #	Course Title	S.H.
MUS 04536	Chamber Music I	1
MUS 04537	Chamber Music II	1
MUSG 06505	History and Literature of Guitar and Lute	3
SMED 32506	Guitar Pedagogy	3

Keyboard Focus Area

Students in this focus area complete 7 s.h. as follows.

Course #	Course Title	S.H.
MUS 04551	Piano Accompanying	1
MUSG 06510	Keyboard Literature	3
SMED 32507	Piano Pedagogy	3

Vocal Focus Area

Students in this focus area complete 11 s.h. as follows.

Course #	Course Title	S.H.
	Select an approved French or Italian or German language course	3
MUS 04545	Opera Role Study I	3
MUS 04546	Opera Role Study II	3
MUS 04551	Piano Accompanying	1
MUSG 06506	Art Song	3
MUSG 06542	Opera Literature	3

Elective Courses 3–12 s.h.

Students select one focus area from the four below.

- Students in the Orchestral Instruments focus area choose 12 s.h. from the following.
- Students in the Guitar focus area choose 5 s.h. from the following.
- Students in the Keyboard focus area choose 7 s.h. from the following.
- Students in the Vocal focus area choose 3 s.h. from the following.

Course #	Course Title	S.H.
MUS 04536	Chamber Music I	1
MUS 04537	Chamber Music II	1
MUS 04541	Jazz Piano	1
MUS 04545	Opera Role Study	3
MUSG 06503	Jazz History	3
MUSG 06506	Art Song Literature	3
MUSG 06509	String Instrument Literature	3
MUSG 06542	Opera Literature	3
MUSG 06545	Development & Interpretation of Choral Literature	2
MUSG 06546	Development & Interpretation of Symphonic Literature	3
SMED 32502	Teaching Music Theory	3
MUSG 06510	Keyboard Literature	3
SMED 32507	Piano Pedagogy	3

Total Required Credits for the Program 34–38 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and Thesis Requirements

- Culminating Experience (Recital)
- Successful completion of oral comprehensive exam

Minimum Required Grades and Cumulative GPA

The Master of Music is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
Dr. Fabio Oliveira
Wilson Hall, Room 163
oliveira@rowan.edu

Master of Music Education (M.M.Ed.)

The Master of Music Education (M.M.Ed.) degree is designed for music educators to refine and advance their philosophical and pedagogical approach(es) to teaching music in a culturally diverse and technologically advanced society. With an emphasis on diversity, equity, inclusion, and access, the Master of Music Education will prepare music educators to be school-based change makers who think critically, engage in responsive teaching, and connect theory to practice. By taking courses in philosophy, curricular innovation, research, and various aspects of musicianship, students will explore current trends in the field of music education, and hone their skills as musicians and educators. Specifically, it will encourage students to:

- Think critically in the areas of music psychology, curriculum, philosophy, research, and pedagogy
- Develop and implement strategies for teaching music in a pluralistic and ever-changing society
- Continue their growth and development in musicianship

The Master of Music Education is designed as an online program, with most course offerings delivered online through Rowan Global and requiring only one on-campus summer residency. The program will facilitate connections between outside institutions by inviting other music education scholars to guest teach various classes based on their expertise. This structure will allow practicing music educators to take courses from around the country while maintaining their employment. With both a thesis and non-thesis option, students can select a format that best suits their needs, whether preparing for a doctoral program or advancing their current practice in the classroom. The Master of Music Education program will be accredited by the National Association for Schools of Music (NASM).

Program Requirements

Required Courses 33 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
MUS 50630	Equity, Access, and Music Education	3
MUS 50660	Innovation in Curriculum and Instruction	3
MUS 50540	Social and Psychological Environments of Music Learning	3
MUS 50650	Philosophy of Music Education	3
MUS 50511	Research Methods in Music Education	3
MUS 50670	Global Musics in Education	3
MUS 50510	Special Topics Seminars (2)*	6
MUS 50610	Master's Final Presentation and Project	3
or MUS 50621	Master's Thesis in Music Education	3

**Seminars are synchronous and during our Summer Intensive session; topics will rotate and change based on current trends.*

Supporting Music Studies Elective Bank (see below) 6 s.h.

Supporting Music Studies Elective Bank

Students are required to take six (6) elective bank credits.

Course #	Course Title	S.H.
MUS 04560	Form and Analysis	3
MUS 05547	Music and the Related Arts	3
MUS 04565	Seminar in Band Conducting	3
MUS 04570	20th Century Literature and Techniques	3
MUS 10509	Graduate and Applied Instrumental I	4
MUS 10510	Graduate and Applied Instrumental II	4
MUS 10513	Graduate Applied Voice I	4
MUS 10514	Graduate Applied Voice II	4
MUS 10529	Graduate Conducting I	4
MUS 10530	Graduate Conducting II	4
MUS 10537	Graduate Ensemble: Concert Choir	1
MUS 10541	Graduate Ensemble: Jazz Band	1
MUS 10545	Graduate Ensemble: Lab Band	1
MUS 10549	Graduate Ensemble: Orchestra	1
MUS 10553	Graduate Ensemble: Wind Ensemble	1
MUS 10569	Graduate Ensemble: Chamber Music	1
MUS 50509	Music Education Workshop	2-3

Total Required Credits for the Program 33 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and Thesis Requirements

- Master's Final Presentation and Project or Master's Thesis in Music Education

Minimum Required Grades and Cumulative GPA

The Master of Music Education is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information

Vanessa Bond
Wilson Hall, Room 225
856.256.4500, ext.53532
bondv@rowan.edu

Post-Baccalaureate Programs (Non-degree)

Post-Baccalaureate Certificate in Music Therapy

Rowan University's Music Therapy Post-Baccalaureate Certificate is intended for students who have already completed a Bachelor's in Music. This program will be offered in conjunction with the Bachelor of Music in Music Therapy. Students in the program will be prepared to become a Board-Certified Music Therapist and to continue in graduate studies in Music Therapy.

Program Requirements

Required Courses 38 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
MUS 98101	Foundations of Music Therapy	3
MUS 98208	Psychology of Music	3
MUS 98301	Principles of Music Therapy I	3
MUS 98401	Principles of Music Therapy II	3
MUS 98310	Music Therapy Research Methods	3
MUS 98409	Therapeutic Principles for Music Therapists	1
MUS 98303	Music Therapy Practicum I	1
MUS 98403	Music Therapy Practicum II	1
MUS 98404	Music Therapy Practicum III	1
MUS 98410	Residency in Music Therapy (repeated for two semesters, 4 credits total)	2
MUS 98205	Clinical Piano Skills I	2
MUS 98212	Clinical Piano Skills II	2
MUS 98206	Clinical Guitar Skills	2
MUS 98207	Music Applications to Music Therapy I	1
MUS 98213	Music Applications to Music Therapy II	1
MUS 98307	Music Applications to Music Therapy III	1
PSY 09305	Developmental Psychopathology	3
PSY 03200	Abnormal Psychology	3

Total Required Credits for the Program 38 s.h.

Foundation Courses

Essentials of Psychology, Abnormal Psychology, and Developmental Psychopathology

Graduation/Exit, Benchmark, and Thesis Requirements

This program requires successful completion of the Residency in Music Therapy Capstone course, which includes a 1040-hour internship.

Minimum Required Grades and Cumulative GPA

The Post-Baccalaureate Certificate in Music Therapy is a Category 3 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information

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College of Humanities & Social Sciences

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Mission

1. Empower students to create innovative academic pathways so that they may become successful and adaptable leaders and innovators with a lasting impact on society.
2. Faculty and students engage with local and global communities to conduct transformative research that mobilizes knowledge to benefit society.
3. Grow and develop mutually beneficial connections among students, faculty, and community partners to reimagine the future.

Vision

Empower. Transform. Engage.
Creating connections in teaching, research, and service to advance society.

Departments

The College of Humanities & Social Sciences (CHSS) has seven departments — English, History, Law and Justice Studies, Philosophy and World Religions, Political Science and Economics, Sociology and Anthropology, and World Languages — as well as a Center for Interdisciplinary Studies.

Services

Center for Professional Success

The Center for Professional Success (CPS) is a comprehensive resource center that supports the academic and career development of College of Humanities & Social Sciences (CHSS) students. The CPS provides a variety of services including internship placement through the CHSS Match Internship Program, which allows students from any college to earn up to 12 credits through approved internship experiences, networking events, travel funding, and career development workshops.

Hollybush Institute for Global Peace and Security

This institute builds on the legacy of the 1967 Glassboro Summit by promoting scholarly research, educational activities, and community outreach related to the history and practice of international dialogue to promote global security, peace, and the rule of law. Imbued with the "Spirit of Glassboro," as President Lyndon Johnson called it, the Institute builds bridges between the humanities and the arts and sciences to inspire innovative global thinking.

The Museum of Anthropology at Rowan University (MARU)

The Museum of Anthropology at Rowan University serves the academic mission of the university as a unit for teaching and learning that contributes to academic excellence. Its collections, public service programs, and research serve to enhance the public understanding and appreciation of the human experience.

Rowan Center for the Study of Holocaust, Genocide, and Human Rights (RCHGHR)

The Rowan Center for Holocaust and Genocide Studies is a leading center in New Jersey for teaching about the Holocaust and other genocides. The RCHGHR offers a range of programs each semester dedicated to combatting bias, prejudice, and anti-Semitism by highlighting human rights and the dignity of every person.

Rowan Center for Social Science Research (RCSSR)

The Rowan University Center for Social Science Research (RCSSR) conducts empirical social science research, data collection and evaluation. RCSSR provides skills, trainings, resources, and support for faculty, students, staff and the community at large who need to use social science methods to carry out systematic, evidence-based, and collaborative research, evaluation and grant writing.

Social-Behavioral, Security and Law Enforcement Cannabis Center (SSLC)

Passage of voter-driven marijuana laws for recreational use signals a societal shift in attitudes for cannabis use in New Jersey. As part of the Rowan University Institute for Cannabis Research, Policy, & Workforce Development, the College of Humanities and Social Sciences houses the hub focusing on the Socio-Behavioral Impact and Enforcement of Legalized Cannabis. Our goal is to become the reference to New Jersey and other states for cannabis research and training for social science research, law enforcement and other criminal justice agencies, and public policy.

The Steve Sweeney Center for Public Policy

The Sweeney Center was created to fill the need for an independent bipartisan public policy center to conduct research and develop pragmatic solutions to complex policy issues based on data-driven analysis, rigorous academic research, and convening working groups that bring together policy experts, stakeholders, and advocates to reach consensus.

Programs Offered

All programs offered are listed below in order of degree/program type and then in alphabetical order by program name. Details about each program are then listed within the catalog in the same order. For the most up-to-date information regarding mode of delivery options for your program of interest, please visit https://global.rowan.edu/programs.

MASTER'S DEGREES

Program Name	Format/location	Program/Major Codes	Avail FT/PT	Total credits
Master of Arts in Criminal Justice	100% Online, Hybrid, and Face-to-Face at Glassboro Campus	MA-CRIMJUST/G105	Both	30
Master of Arts in Diversity and Inclusion	Face-to-Face at Glassboro Campus	MA-DIV/INCL/G147	Both	30
Master of Arts in History	Face-to-Face at Glassboro campus	MA-HIST/G205	Both	30
Master of Arts in Holocaust and Genocide Education Studies	Face-to-Face at Glassboro Campus	MA-HOLGENED/G823	Both	30
Master of Public Policy	Face-to-Face at Glassboro Campus	MPP-PUBPO/G226	Both	39
Master of Science in Emergency and Threat Response Management	Face-to-Face at Camden campus	MS-EMTHRTMGT/G930	Both	30

CERTIFICATES OF GRADUATE STUDY / COGS (NON-DEGREE)

Program Name	Format/location	Program/Major Codes	Avail FT/PT	Total credits
Certificate of Graduate Study in Diversity and Inclusion	Face-to-Face at Glassboro campus	COG-DIVERSIN/G144	Both	12
Certificate of Graduate Study in Global History	Face-to-Face at Glassboro campus	COG-WRLDHIS/G121	Both	15
Certificate of Graduate Study in History	Face-to-Face at Glassboro campus	COG- HISTORY/G120	Both	15
Certificate of Graduate Study in Holocaust and Genocide Education	Face-to-Face at Glassboro campus	COG- HOLGENED/G924	Both	12
Certificate of Graduate Study in Public Health Preparedness and Emergency Medical Management	Face-to-Face at Camden campus	COG- HLTHEMMD/G929	Both	12
Certificate of Graduate Study in Public Policy	Face-to-Face at Glassboro campus	COG- PUBPLCY/G928	Both	9

Admissions

For the most up-to-date information regarding admission requirements, entry points, and application deadlines, please visit https://global.rowan.edu/programs. Click on your program of interest to be connected to program and admission details.

Academic Program Policy Categories

For the purposes of both the Minimum Satisfactory Academic Progress policy and the Minimum Graduation Requirements policy, post-baccalaureate/graduate academic programs at Rowan University fall into one of three major categories which are identified by their grade requirements as outlined below. (See individual program descriptions for academic categories.)

Category 1: To maintain Minimum Satisfactory Academic Progress in and to successfully graduate from a Category 1 program students must:

- Earn no more than two total "B-" grades
- Earn no grades lower than a "B-"
- Earn an official cumulative GPA (according to matriculation level) of at least 3.000 on Rowan's 4.000 scale

Category 2: To maintain Minimum Satisfactory Academic Progress in and to successfully graduate from a Category 2 program students must:

- Earn no grades lower than a "B-"
- Earn an official cumulative GPA (according to matriculation level) of at least 3.000 on Rowan's 4.000 scale

Category 3: To maintain Minimum Satisfactory Academic Progress in and to successfully graduate from a Category 3 program students must:

- Earn no more than two total C grades of any combination of "C+" or "C." (C- grades are not acceptable.)
- Earn no grades lower than a "C"
- Earn an official cumulative GPA (according to matriculation level) of at least 3.000 on Rowan's 4.000 scale

Policy Prior to Fall 2013 Matriculation

The academic review and minimum graduation requirements review policies will be applied to Rowan graduate and post-baccalaureate students who matriculate beginning Fall 2013 or later; however, current students (those matriculated and active before Fall 2013) will be grandfathered under the prior policy/practice, whose grade and GPA requirements are the same as Academic Review Category 3.

Master's Degrees

Master of Arts in Criminal Justice (M.A.)

The Master of Arts in Criminal Justice prepares students for leadership positions in criminal justice agencies; for research positions in federal, state, county, city, non-profit and private research institutions; and for further study in doctoral programs. There are many different ways to obtain a Master of Arts in Criminal Justice degree at Rowan University, and all of the options consist of ten courses or 30 credits. Students can take evening courses in the classroom, either part-time or full-time. In this traditional face-to-face program, they can pursue the Thesis Track or the Non-Thesis Track. The entire program also is offered online on a part-time basis, and students can take a mix of face-to face and online classes. For students who are still undergraduates, there is an opportunity to apply to the Combined Advanced Degree Program that enables students to earn their Bachelor of Arts in Law and Justice Studies and Master of Arts in Criminal Justice in five years.

All of these options focus on the growing emphasis in the criminal justice system on using research evidence to evaluate the effectiveness of programs and policies aimed at preventing and controlling crime. Graduate faculty have earned doctoral degrees from the best Criminal Justice programs in the country and have practical experience working in the system. The curriculum prepares students for professional careers by providing an understanding of the causes of crime, the impact of law on society and contemporary issues in policing, courts and corrections.

Tracks

The Face-to-face program on the Glassboro campus offers students the options of choosing one of two tracks. All students take the same six required core courses, but the remaining four courses and graduation exit requirements are different, as described below. The Thesis Track is not available to Online or Combined Advanced Degree students.

- **Thesis Track:** Students choosing the Thesis Track will complete 6 required core courses, select two electives, and earn six credits for doing research and writing a thesis while working closely with experienced faculty.
- **Non-Thesis Track:** Students choosing the Non-Thesis Track will complete 6 required core courses, select four electives, and take a comprehensive exam after completing their coursework. Online and Combined Advanced Degree students follow the Non-Thesis Track.

Rowan University undergraduates majoring in Law and Justice Studies can apply to the Combined Advanced Degree Program during their Junior years, which allows them to earn both the Bachelor of Arts in Law and Justice Studies and Master of Arts in Criminal Justice degrees in five years, double count four graduate courses towards both the undergraduate and graduate degrees, and pay undergraduate tuition for those four courses.

Program Requirements

Required Core Courses 18 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
CJ 09510	Contemporary Issues in Criminal Justice	3
CJ 09511	Research Methods I	3
CJ 09512	Research Methods II	3
CJ 09515	Law and Society	3
CJ 09517	Criminal Justice Policy Analysis	3
CJ 09518	Contemporary Developments in Theory	3

Elective Courses 6-12 s.h.

Choose 6 s.h. (Thesis Track) or 12 s.h. (Non-Thesis Track) of approved electives in consultation with the Academic Advisor.

Course #	Course Title	S.H.
CJ 09516	Administrative Law/Ethics	3
CJ 09519	Seminar in Criminal Justice Planning	3
CJ 09520	Courts and Supportive Agencies	3
CJ 09521	Prevention and Rehabilitation	3
CJ 09522	Seminar in Violence	3
CJ 09523	White Collar Crime	3
CJ 09524	Police and Society	3
CJ 09525	Altruism, Cooperation, and Criminal Justice	3
CJ 09526	Management of Criminal Justice Organizations	3
CJ 09527	Gender and Crime	3
CJ 09528	Seminar in Juvenile Justice and Delinquency	3
CJ 09529	Community Justice	3
CJ 09530	International Criminal Law Seminar	3
CJ 09531	Sentencing: Philosophy and Policy	3

CJ 09532	Race, Ethnicity, Class & Justice	3
	Other approved graduate-level courses as approved by Academic Advisor	3

Required Thesis Courses (if Thesis-Track is selected) 6 s.h.

Course #	Course Title	S.H.
CJ 09601	Master's Thesis in Criminal Justice I	3
CJ 09602	Master's Thesis in Criminal Justice II	3

Total Required Credits for the Program 30 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and/or Thesis Requirements

- Successful completion of a comprehensive exam is required for those who select the Non-Thesis Track, for Online students, and for those in the Combined Advanced Degree Program.
- If Thesis Track is selected, students must successfully complete and defend Master's Thesis.

Minimum Required Grades and Cumulative GPA

The Master of Arts in Criminal Justice is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information

Wanda D. Foglia
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856.256.4399
foglia@rowan.edu

Master of Arts in Diversity and Inclusion (M.A.)

The Masters of Arts in Diversity and Inclusion is unique as it offers professionals expertise in understanding and developing long-term solutions to building diverse and inclusive communities. Grounded in ethnographic methodologies and culminating in an applied capstone, our program seeks to help educate transformational participant-leaders that inspire and empower their communities to learn, collaborate, and construct innovative answers. By basing our coursework in the Humanities and Social Sciences, the students learn adaptable approaches to alleviate inequity and exclusion in a wide range of environments. They will understand the social, historical, ideological, and cultural dimensions of inclusion and exclusion. The curriculum is designed to offer students a critical approach to understand and evaluate the ways systems of oppression and exclusion play a role in personal, social, and institutional relations. Moreover, students will have the opportunity to critique and apply custom solutions during their graduate study.

Program Requirements

Required Core Courses 18 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
DI 68501	Introduction to Diversity and Inclusion Studies	3
ANTH 02510	Qualitative Research	3
PHIL 09521	Philosophical Approaches to Diversity, Equity and Identity	3
HIST 05519	History of Political and Social Movements	3
ENGL 02530	Diversity, Equity, and Inclusion in U.S. Literature	3
SOC 08573	Critical Race Theory: Application and Intervention	3

Elective Courses 6 s.h.

Choose 6 s.h. from the following:

Course #	Course Title	S.H.
CJ 09529	Community Justice	3
CJ 09530	International Criminal Law Seminar	3
CJ 09525	Altruism, Cooperation, and Criminal Justice	3
SOC 08575	Social Determinants of Health: Theory and Intervention in Urban Settings	3
SOC 08599	Urban Environmental Health	3
SOC 08600	Social Experience of City Life and Urban Inequalities	3
HIST 05561	Early American History Seminar	3

HIST 05562	Nineteenth Century American History Seminar	3
HIST 05563	American History after 1917	3
MAWR 01630	Writing Difference	3
MAPR 01541	Understanding and Writing Grants and Proposals	1
CASE 90512	Examining Intersectionality in Critical Theories of Race, Class, Gender, Sexuality and Citizenship	3
CASE 90710	Power and Privilege: Social Construction of Difference	3
CASE 90513	History of Urban Education and Communities	3
CASE 90535	Disability Studies	3
DI 68520	Topics in Diversity and Inclusion	3
	Other approved graduate-level courses as approved by Program Coordinator	3

Required Capstone Course		6 s.h.
Course #	**Course Title**	**S.H.**
DI 68590	Applied Diversity and Inclusion	3
DI 68591	Capstone in Applied Diversity and Inclusion	3

Total Required Credits for the Program	30 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and/or Thesis Requirements

Successful completion of capstone course.

Minimum Required Grades and Cumulative GPA

The Master of Arts in Diversity and Inclusion is a Category 3 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
Nadine Sullivan
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856.256.4886
sullivann@rowan.edu

Master of Arts in History (M.A.)

The Master of Arts in History at Rowan is designed mainly for students who desire increased competence in historical studies preparatory or supplementary for teaching in that field on the high school or community college level. It is also appropriate for students who seek qualification for admission to a doctoral program at another institution and for students who wish to pursue a liberal education at an advanced level for intellectual challenge and personal self-fulfillment.

Our program is set in the tradition of a Liberal Arts education. Courses offer an opportunity for students to extend their knowledge and enhance their competence in historical studies through direct, face-to-face, and virtual interaction with Rowan's award-winning, full-time faculty members.

Total graduate semester hours required for program completion is 30. Students are encouraged to devote at least 12 credits of their electives to pursuing an area of concentration in American, European, or global history, but they must take at least one course in another area. Up to 6 credits may be taken as independent study, and students may take one elective graduate course outside of the History Program, chosen in consultation with the graduate advisor.

Tracks

The program includes two tracks. Each has different course and graduation exit requirements which are outlined in the chart.

- **Thesis Track:** The Master of Arts Thesis Track is designed for those who are interested in pursuing original research and is strongly recommended for those who are planning to do doctoral work in history. Students pursuing the thesis track will complete the 6 required credits, 18 elective graduate credits in history, and 6 credits of Master's Thesis.
- **Non-Thesis Track:** Students may choose to complete the degree by pursuing coursework without a thesis. This track may be appropriate for those seeking professional development or broader content knowledge. Students pursuing the non-thesis track will complete the 6 required credits and 24 elective graduate credits in history.

Rowan University undergraduates majoring in the Bachelor of Arts in History program can apply to the accelerated B.A./M.A. dual degree (4+1) program allowing them to earn both the Bachelor of Arts and Master of Arts degrees in five years.

Program Requirements

Required Courses 6 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
HIST 05510	Readings & Research in History I	3
HIST 05512	Readings & Research in History II	3

Elective Courses 18-24 s.h.

Choose 24 s.h. (non-thesis track) or 18 s.h. (thesis-track) of approved electives in consultation with the Academic Advisor.

Course #	Course Title	S.H.
HIST 05506	Research Methods in History	3
HIST 05511	Colloquium in American History I	3
HIST 05514	Colloquium in American History II	3
HIST 05516	Colloquium in American History III	3
HIST 05522	Colloquium in European History I	3
HIST 05523	Colloquium in European History II	3
HIST 05524	Colloquium in European History III	3
HIST 05531	Colloquium in Global History I	3
HIST 05533	Colloquium in Global History II	3
HIST 05535	Colloquium in Global History III	3
HIST 05544	NJ in American History	3
HIST 05545	History of Crime	3
HIST 05551	Graduate Independent Study	3
HIST 05561	Early American History Seminar	3
HIST 05562	Nineteenth Century American History Seminar	3
HIST 05563	American History after 1917	3
HIST 05571	Ancient Mediterranean History Seminar	3
HIST 05572	Medieval and Early Modern European History Seminar	3
HIST 05573	Modern European History Seminar	3
HIST 05581	African History Seminar	3
HIST 05582	Middle Eastern History Seminar	3
HIST 05583	Russian History Seminar	3
HIST 05584	Latin American History Seminar	3
HIST 05585	East Asian History Seminar	3
HIST 05586	South and Southeast Asian Seminar	3

Required Thesis Courses (if thesis track is selected) 6 s.h.

Course #	Course Title	S.H.
HIST 05601	Master's Thesis in History I	3
HIST 05602	Master's Thesis in History II	3

Total Required Credits for the Program 30 s.h.

Foundation Courses

Students without an undergraduate degree in History are required to take HIST 05506, Research Methods in History, unless they receive an exemption from the graduate advisor based on submitted written work and/or a personal interview.

Graduation/Exit, Benchmark, and/or Thesis Requirements

Students must successfully complete and defend a Master's Thesis.

If the thesis track is chosen, students must seek the approval of the Department after the completion of Readings and Research I-II, and the permission of a thesis advisor. Students must successfully complete and defend a Master's Thesis.

Minimum Required Grades and Cumulative GPA

The Master of Arts in History is a Category 3 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information

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Master of Arts in Holocaust and Genocide Education Studies (M.A.)

The Masters of Arts in Holocaust and Education Studies prepares its students to create lessons, develop curricula and programs, and evaluate curricula and programs in Holocaust and Genocide Education. It brings deep content knowledge together with a strong constructivist pedagogy in order to help students consider what Holocaust and genocide education might look like across diverse settings. Additionally, this is an essential program, as New Jersey is one of eight states with a Holocaust and genocide teaching mandate, which requires P-12 teachers to teach about the Holocaust and genocides "at the earliest possible moment."

Program Requirements

Required Core Courses 15 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
HGS 70507	Introduction to HGE	3
HGS 70587	HGE Program Evaluation and Creation	3
HIST 05573	Modern European Seminar: Holocaust History	3
HIST 05531	Colloquium in Global History: Comparative Genocide	3
HIST 05523	Colloquium in European History II: Holocaust and Genocide Historiography	3

Elective Courses 12 s.h.

Choose 12 s.h. from the following:

Course #	Course Title	S.H.
HGS 70577	HGE Student Assessment	3
HIST 05523	Colloquium in European History II: Modern Jewish History	3
HIST 05524	Colloquium in European History III: German History	3
HIST 05511	Colloquium in American History: Public History	3
HIST 05511	Colloquium in American History: Internship in History	3
HGS 70527	Colloquium in Holocaust and Genocide Studies	3
THD 07541	Theatre of the Holocaust	3
SOC 08575	Integrating Qualitative and Quantitative Methods	3
	Other approved graduate-level courses as approved by Program Coordinator	3

Required Capstone Course 3 s.h.

Course #	Course Title	S.H.
HGS 70597	Applied Capstone Project in Holocaust and Genocide Education	3

Total Required Credits for the Program 30 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and/or Thesis Requirements

Successful completion of capstone course.

Minimum Required Grades and Cumulative GPA

The Master of Arts in Holocaust and Genocide Education Studies is a Category 3 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information

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richj@rowan.edu

Master of Public Policy (M.P.P.)

Rowan University's Master of Public Policy (M.P.P.) Program aims to provide its students with the skills needed to be successful leaders and public servants in the state of New Jersey and beyond. The program features core courses on Public Policy taught by Rowan faculty and practitioners. Students will also specialize in policy areas consistent with Rowan's strengths or choose an interdisciplinary track. Students will gain valuable field experience and engage in in-depth research. The program features Political Science, Economics, and Policy faculty and members of the New Jersey public policy community with years of experience in the field. The program is designed to accommodate full-time students and working professionals with evening classes and a flexible timeline for completion.

Program Requirements

Required Courses 21 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S. H.
EDPA 02510	Introduction to Policy Analysis	3
EDPA 02512	Quantitative Methods in Public Policy	3
EDPA 02518	Public Finance & Cost-Benefit Analysis	3
EDPA 02520	Social Policy	3
EDPA 02690	Capstone in Public Policy	3

Required Thesis or Internship Courses 6 s.h.

(s.h.: semester hours/credit hours)

Choose one of the following:

Course #	Course Title	S. H.
EDPA 02580	Public Policy Internship	6
or		
EDPA 02590 ***and***	Thesis in Public Policy I	3
EDPA 02592	Thesis in Public Policy II	3

Electives 12 s.h.

(s.h.: semester hours/credit hours)

Select one policy field and consult with advisor for policy field courses.

- Criminal Justice
- Diversity and Inclusion
- Education Policy
- Engineering and Public Policy
- Environmental Policy
- COGS in First Responder Executive Leadership
- Health Policy
- Interdisciplinary Policy
- COGS in Project Management
- COGS in Public Health Preparedness and Emergency Medical Management
- COGS in Social Change and Social Movement
- COGS in Sustainability Studies

Total Required Credits for the Program 39 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and/or Thesis Requirements

Completion of thesis or internship.

Minimum Required Grades and Cumulative GPA

The Master of Public Policy is a Category 3 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
Katharine Javian
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Master of Science in Emergency and Threat Response Management (M.S.)

The MS in Emergency and Threat Assessment Management meets the pressing need to fill state and regional leadership gaps that exist while understanding the growing necessity to build resilience and recognizing that the whole community approach to a variety of threats and their management is becoming a reality. The curriculum covers operations management, planning, response, terrorism and is designed to provide students with a global outlook, interpersonal skills, and emergency management knowledge and skills. Students will be prepared for management positions in emergency management in government and industry.

The M.S. in Emergency and Threat Response Management is a full-time or part-time program offered in a face-to-face format at our Camden campus. It requires the completion of 30 graduate semester hours (10 courses). The program has a thesis and non-thesis option.

Program Requirements

Required Courses 24 s.h.

Choose 24 s.h. from the following.

Course #	Course Title	S.H.
DPEM 00500	Complex Organizational Theory in Emergency Services	3
DPEM 00550	Disaster Policy and Legal Environment in Emergency Management	3
DPEM 00538	Research, Design, Statistics, and Program Evaluation in Emergency Management	3
DPEM 00600	Public Budgeting and Finance for Emergency Managers	3
DPEM 00610	Advanced Emergency Management Exercise Design, Evaluation, and Instruction	3
DPEM 00645	Advanced Incident Command: Leadership and Ethics	3
DPEM 00655	Threat Assessment in Homeland Security	3
DPEM 00698	Capstone Experience in Emergency and Threat Management Response (Non-thesis option)	3
DPEM 00699	Emergency and Threat Response Management (Thesis option)	3

Elective Courses 6 s.h.

Choose 6 s.h. from the following.

Course #	Course Title	S.H.
CJ 09526	Management of Criminal Justice Organizations	3
ACC 03509	Intermediate Financial Accounting	3
MGT 06601	Strategic Planning for Operating Managers	3
MGT 06521	Leadership Theory and Practice	3
MGT 06503	Organization Development	3
MGT 06500	Managerial Accounting	3
ACC 03500	Designing, Developing, and Leading High Performance Organizations	3
ACC 03507	Government and Non-For-Profit Accounting	3
SOC 08578	Critical Race Theory: Application and Intervention	3
SOC 08599	Urban Environmental Health	3
SOC 08591	Social Dynamics of Political Violence, Insurgency, and Civil Unrest	3

Total Required Credits for the Program 30 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and Thesis Requirements Satisfy all course requirements as dictated by the academic department. Earn an official cumulative GPA of 2.75 on Rowan's 4.0 scale. All students must complete a graduate-level capstone project or thesis. Any other requirements for graduation from Rowan University.

Minimum Required Grades and Cumulative GPA

The Master of Science in Emergency and Threat Response Management is a Category 3 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
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Certificates of Graduate Study (Non-degree)

Certificate of Graduate Study in Diversity and Inclusion (COGS)

The Certificate in Graduate Study in Diversity and Inclusion will educate professionals who can help create diverse workspaces where innovation can thrive when people are able to work, volunteer, and govern because of their differences. Rooted in ethnographic methodology, the program will provide students with knowledge and methodologies to help specific organizations or institutions work towards building diverse and inclusive communities. This work requires deep knowledge of cultures, history, ideas, social structures, institutions, and politics, which are concepts the College of Humanities and Social Sciences [CHSS] has been exploring for generations.

Because this program is housed in CHSS and is grounded in disciplinary methodologies, graduates will be prepared to work in a wide range of contexts, adaptable to the needs of their industry or community. For most, this certificate will add an expertise for an existing professional to be a leader in issues of diversity and inclusion.

Program Requirements

Required Courses 6 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
DI 68501	Introduction to Diversity and Inclusion Studies	3
ANTH 02510	Qualitative Research	3

Elective Courses 6 s.h.

(s.h.: semester hours/credit hours)

Choose 6 s.h. from the following options

Course #	Course Title	S.H.
PHIL 09521	Philosophical Approaches to Diversity, Equity and Identity	3
HIST 05519	History of Political and Social Movements	3
ENGL 02530	Diversity, Equity, and Inclusion in U.S. Literature	3

Total Required Credits for the Program 12 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and/or Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The Certificate of Graduate Study in Diversity and Inclusion is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
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sullivann@rowan.edu

Certificate of Graduate Study in Global History (COGS)

The Certificate of Graduate Study in Global History offers an opportunity to study on a graduate level for professional or personal development. The courses will range from topics in Latin American, Russian, Asian, African and Middle Eastern history. Each offering will familiarize students with relevant primary and secondary sources, as well as up-do-date historical interpretations and methodologies in the respective fields.

Program Requirements

- Total semester hours required graduate work for program completion: 15 Semester Hours (s. h.)
- 12 s.h. must be in areas other than United States history

Required Courses 9 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
HIST 05511	Colloquium in American History	3
HIST 05522	Colloquium in European History	3
HIST 05531	Colloquium in Global History	3

Elective Courses 6 s.h.

Select two courses jointly approved by the applicant and the graduate advisor.

Total Required Credits for the Program 15 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and/or Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The Certificate of Graduate Study in Global History is a Category 3 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
Scott Morschauser
Robinson Hall
morschauser@rowan.edu

Certificate of Graduate Study in History (COGS)

The Certificate of Graduate Study in History offers an opportunity to study history on a graduate level for professional or personal development. The courses will familiarize students with relevant primary and scholarly sources as well as up to date historical interpretations and methodologies in the field.

Program Requirements

Required Courses 9 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
HIST 05511	Colloquium in American History I	3
HIST 05522	Colloquium in European History I	3
HIST 05531	Colloquium in Global History I	3

Elective Courses 6 s.h.

Select two courses jointly approved by the applicant and the graduate advisor.

Total Required Credits for the Program 15 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and/or Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The Certificate of Graduate Study in History is a Category 3 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
Scott Morschauser
Robinson Hall
morschauser@rowan.edu

Certificate of Graduate Study in Holocaust and Genocide Education (COGS)

The Certificate of Graduate Study in Holocaust and Genocide Education (HGE) will be the first of its kind nationally. It brings together deep content knowledge with a strong constructivist pedagogy in order to help students consider what Holocaust and Genocide Education might look like across diverse settings. This curriculum could potentially serve both teachers and professionals in public programming of historical topics.

This program will fill a much-needed gap in higher education. By helping educators have both a better grasp of Holocaust and genocide content, as well as a mastery of constructivist pedagogies, the COGS in HGE will break new ground. Additionally, this is an essential program, as New Jersey is one of eight states with a Holocaust and Genocide teaching mandate. NJ requires P-12 teachers to teach about the Holocaust and other genocides "at the earliest possible moment."

Program Requirements

Required Courses 9 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
HGS 70507	Introduction to Holocaust and Genocide Education	3
HGS 70537	Holocaust and Genocide Education Program Evaluation and Creation	3
HIST 05522	Colloquium in European History: History of the Holocaust	3

Elective Courses 3 s.h.

(s.h.: semester hours/credit hours)

Choose one (1) course from the following:

Course #	Course Title	S.H.
HIST 05511	Colloquium in American History I	3
HIST 05522	Colloquium in European History I	3
HIST 05531	Colloquium in Global History	3

Total Required Credits for the Program 12 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and/or Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The Certificate of Graduate Study in Holocaust and Genocide Education is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
Jennifer Rich
Department of Sociology
richj@rowan.edu

Certificate of Graduate Study in Public Health Preparedness and Emergency Medical Management (COGS)

The need to address health-related issues in the wake of disasters in the form of public health, medical preparedness, and emergency management to prepare for, respond to, and recover from natural disasters, terrorism, pandemics or other emerging health threats has become a cornerstone of 21st-century emergency management. The Certificate of Graduate Study in Public Health Preparedness and Emergency Medical Management provides specialized training in the management of public health crisis related to disasters, crisis, and emergency management to meet the increasing need. Focusing on how emergency management, medical, public health, and government officials can work to address medical needs during times of crisis. This certificate will strengthen one's knowledge in disease surveillance, infection control, and the planning for and response to public health crisis from a wide variety of concerns at the regional, national and global contexts relative to diversity, globalization, migration, social inequalities, economic inequalities, and contemporary realities of a more complex diverse society.

Program Requirements

Required Courses 12 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
DPEM 00542	Public Health Emergency Preparedness and Response	3
DPEM 00544	Emerging Health Threats: Risks and Surveillance	3
DPEM 00605	Disaster Public Health	3
DPEM 00615	Management of First Responder Organizations	3

Total Required Credits for the Program 12 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and/or Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The Certificate of Graduate Study in Public Health Preparedness and Emergency Medical Management is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information

DeMond Miller
Campbell Library
856.256.4500, ext.53517
millerd@rowan.edu

Certificate of Graduate Study in Public Policy (COGS)

The Certificate of Graduate Study in Public Policy will provide students with a fundamental understanding of critical tools of effective policy analysis, including formal program evaluation, benefit-cost analysis, and an introduction to policy-relevant statistics. The program combines knowledge of essential administrative functions with the skills necessary to interpret and conduct actual studies, including assessment of the need for government intervention and how to use research on behalf of the public at large. The certificate will be valued by government and corporate employers, as well as nonprofit agencies and international organizations.

Program Requirements

Required Courses 3 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
EDPA 02510	Introduction to Policy Analysis	3

Elective Courses 6 s.h.

(s.h.: semester hours/credit hours)

Choose two (2) courses from the following:

Course #	Course Title	S.H.
EDPA 02520	Colloquium in Public Policy	3
POSC 07520	Colloquium in Political Science	3
ECON 04520	Colloquium in Economics	3

Total Required Credits for the Program 9 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and/or Thesis Requirements

Completion of all required coursework in accordance with University requirements for good standing.

Minimum Required Grades and Cumulative GPA

The Certificate of Graduate Study in Public Policy is a Category 3 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information

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College of Science & Mathematics

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Mission

The College of Science & Mathematics builds on the foundation of a liberal education to provide graduate programs that prepare students for professional positions, enhance skills needed in current careers, and provide training needed for continuing study in doctoral programs. Committed to excellence in instruction and scholarship, its disciplines promote rigorous inquiry, analytical and integrative reasoning, and decision-making skills.

In addition to the programs listed below, the College supports graduate programs in the College of Education. The various curricula in the College combine the richness of science and mathematical theories and traditions with applications for the workplace in the new millennium.

The College of Science & Mathematics affirms the natural sciences, physical sciences, behavioral sciences, and mathematics as core components of liberal education and the foundation of professional preparation. The College is committed to excellence in instruction, research, and scholarship. Its disciplines promote extensive interaction between faculty and students, attention to individual development of critical and creative thinking, the building of interdisciplinary communities through partnerships both internal and external, and the development of new knowledge through research and creative activities. The College plays an essential role in Rowan's mission: to educate students who remain lifelong learners and ethically responsible citizens, sensitive to cultural and ethnic diversity and engaged in advancing our global society.

Departments

The departments in the College are: Biological & Biomedical Sciences, Chemistry & Biochemistry, Computer Science, Mathematics, Physics & Astronomy, and Psychology.

Programs Offered

All programs offered are listed below in order of degree/program type and then in alphabetical order by program name. Details about each program are then listed within the catalog in the same order. For the most up-to-date information regarding mode of delivery options for your program of interest, please visit https://global.rowan.edu/programs/index.html.

DOCTORAL DEGREES

Program Name	Format/location	Program/Major Codes	Avail FT/PT	Total credits
Doctor of Philosophy in Clinical Psychology	Face-to-Face at Glassboro campus	PHD-CLINPSY/D200	Full-time	93
Doctor of Philosophy in Materials Science and Engineering	Face-to-Face at Glassboro campus	PHD-MATSCENG/D912	Full-time	72
Doctor of Philosophy in Pharmaceutical Chemistry	Face-to-Face at Glassboro campus	PHD-PHCHEM/D903	Full-time	63

MASTER'S DEGREES

Program Name	Format/location	Program/Major Codes	Avail FT/PT	Total credits
Master of Arts in Applied Behavior Analysis	Face-to-Face at Glassboro campus	MA- APPLBEH/G222	Both (however, no more than 9 credits/semester)	33
Master of Arts in Clinical Mental Health Counseling	Face-to-Face at Glassboro campus	MA- MNTHLTH/G824	Full-time	60
Master of Arts in School Psychology (in conjunction with College of Education)	Face-to-Face at Glassboro campus	MA-SCHPSYCH/G822	Both	33
Master of Arts in Mathematics	Face-to-Face at Glassboro campus	MA- MATH/G701	Both	30
		Concentration Name/Code		
		Pure Mathematics/C924		
		Applied Mathematics/C925		
		Statistics/C926		
Master of Science in Bioinformatics	Face-to-Face at Glassboro campus	MS-BINF/G499	Both	30
Master of Science in Computer Science	Face-to-Face at Glassboro campus	MS- CS/G704	Both	30
Master of Science in Cybersecurity	Face-to-Face at Glassboro campus	MS-CYBERSEC/G710	Both	30
Master of Science in Data Science	Face-to-Face/Glassboro campus	MS-DATASCI/G706	Both	30
		Concentration Name/Code		
		Health Data Analytics/C720		
		Business Data Analytics/C709		
Master of Science in Pharmaceutical Science	Face-to-Face at Glassboro campus	MS-PHARMASCI/G301	Both	31

CERTIFICATES OF ADVANCED GRADUATE STUDY / CAGS (NON-DEGREE)

Program Name	Format/location	Program/Major Codes	Avail FT/PT	Total credits
Certificate of Advanced Graduate Study in Applied Behavior Analysis	Face-to-Face at Glassboro campus	CAG- APPLBEH/G212	Part-time	24
Certificate of Advanced Graduate Study in Clinical Mental Health Counseling	Face-to-Face at Glassboro campus	CAG- MNTHLTH/G211	Part-time	12

CERTIFICATES OF GRADUATE STUDY / COGS (NON-DEGREE)

Program Name	Format/location	Program/Major Codes	Avail FT/PT	Total credits
Certificate of Graduate Study in Cannabinoid Chemistry	Hybrid at Glassboro campus	COG-CANCHEM/G150	Part-time	12-13
Certificate of Graduate Study in Computational Data Science	Face-to-Face at Glassboro campus	COG-CODATASC/G152	Part-time	12
Certificate of Graduate Study in Cybersecurity Architecture	Face-to-Face at Glassboro campus	COG-CYBARC/G153	Part-time	12
Certificate of Graduate Study in Cybersecurity Principles	Face-to-Face at Glassboro campus	COG-CYSECPR/G148	Part-time	12
Certificate of Graduate Study in Health Data Management	Face-to-Face at Glassboro campus	COG-HTHDMGMT/G135	Part-time	12
Certificate of Graduate Study in Industrial Chemistry	Face-to-Face at Glassboro campus	COG- INDUSCHE/G925	Part-time	12-13
Certificate of Graduate Study in Networks	Face-to-Face at Glassboro campus	COG -NETWORK/G128	Part-time	12
Certificate of Graduate Study in Research and Leadership in Applied Behavioral Analysis	Face-to-Face at Glassboro campus	COG-RESLDABA/G926	Part-time	12
Certificate of Graduate Study in Software Engineering	Face-to-Face at Glassboro campus	COG- SFTWENG/G129	Part-time	12

POST-BACCALAUREATE PROGRAMS (NON-DEGREE)

Program Name	Format/location	Program/Major Codes	Avail FT/PT	Total credits
Post-Baccalaureate Certificate in Applied Behavior Analysis	Face-to-Face at Glassboro campus	CRT- APPLBEH/A122	Both	18
Post-Baccalaureate Certificate in Pre-Health Studies	Face-to-Face at Glassboro campus	CRT-PREHLTST/9835	Both	32

Admissions

For the most up-to-date information regarding admission requirements, entry points, and application deadlines, please visit https://global.rowan.edu/programs/index.html. Click on your program of interest to be connected to program and admission details.

Academic Program Policy Categories

For the purposes of both the Minimum Satisfactory Academic Progress policy and the Minimum Graduation Requirements policy, post-baccalaureate/graduate academic programs at Rowan University fall into one of three major categories which are identified by their grade requirements as outlined below. (See individual program descriptions for academic categories.)

Category 1: To maintain Minimum Satisfactory Academic Progress in and to successfully graduate from a Category 1 program students must:

- Earn no more than two total "B-" grades
- Earn no grades lower than a "B-"
- Earn an official cumulative GPA (according to matriculation level) of at least 3.000 on Rowan's 4.000 scale

Category 2: To maintain Minimum Satisfactory Academic Progress in and to successfully graduate from a Category 2 program students must:

- Earn no grades lower than a "B-"
- Earn an official cumulative GPA (according to matriculation level) of at least 3.000 on Rowan's 4.000 scale

Category 3: To maintain Minimum Satisfactory Academic Progress in and to successfully graduate from a Category 3 program students must:

- Earn no more than two total C grades of any combination of "C+" or "C." (C- grades are not acceptable.)
- Earn no grades lower than a "C"
- Earn an official cumulative GPA (according to matriculation level) of at least 3.000 on Rowan's 4.000 scale

Policy Prior to Fall 2013 Matriculation

The academic review and minimum graduation requirements review policies will be applied to Rowan graduate and post-baccalaureate students who matriculate beginning Fall 2013 or later; however, current students (those matriculated and active before Fall 2013) will be grandfathered under the prior policy/practice, whose grade and GPA requirements are the same as Academic Review Category 3.

Doctoral Degrees

Doctor of Philosophy in Clinical Psychology (Ph.D.)

The Doctor of Philosophy in Clinical Psychology Program follows a scientist-practitioner model featuring personalized guidance from faculty advisors in conducting high-quality original research projects. While the program has broad and general research and clinical training, there are also evaluated educational experiences in integrated healthcare and health psychology. These experiences prepare students for research and clinical careers in health care settings.

Distinguishing features of the program include an exemplary faculty with theoretically grounded research programs as well as highly valued empiricism and the use of evidence-based assessment/treatment techniques. Beginning in their second year, student in the program will complete clinical rotations at highly competitive practicum sites in the tri-state area, including the opportunity for interdisciplinary collaborations with Cooper Medical School of Rowan University, Rowan School of Osteopathic Medicine, and the M.D. Anderson Cancer Center at Cooper Hospital. The Clinical Psychology Ph.D. Program in the Department of Psychology at Rowan University is committed to bringing together students and faculty from diverse backgrounds and emphasizes individual differences as well as interconnectedness between biological, psychological, and sociocultural factors.

The Rowan University Doctor of Philosophy in Clinical Psychology is a full-time program that requires the completion of 93 semester hours over four years plus a one-year clinical internship. In addition to coursework, students obtain a master's degree and complete several evaluated benchmarks on route to the doctoral degree. Classes are primarily held during the day. Students will be simultaneously admitted to both the Master of Arts and Doctor of Philosophy in Clinical Psychology programs and expected to complete requirements for both degrees. As of May 2019, the program is accredited on contingency by the American Psychological Association (APA), and the program's website can be viewed for more details on the status of the accreditation. Additionally, the program curriculum is consistent with most requirements for licensure as a Psychologist, although qualification for licensure in every state cannot be guaranteed and is dependent upon specific state licensure requirements.

Program Requirements

The coursework for the Rowan University Doctor of Philosophy in Clinical Psychology has been designed and sequenced in a way that will allow students to develop increasingly complex and cumulative knowledge over the course of their training. Additionally, practicum training will be sequenced in a way that allows students to attain increasingly complex clinical competencies. Students will receive individual and/or group supervision from faculty and/or external supervisors. The following courses make up the Doctor of Philosophy in Clinical Psychology program.

Required Scientific Foundations Courses 12 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
PSY 09700	Human Development	3
PSY 10630	Biological Bases of Behavior	3
PSY 05621	Social Issues in Health and Wellness	3
PSY 01750	Multicultural Perspectives	3

Required Research Training and Practice Courses 15 - 16 s.h.

Course #	Course Title	S.H.
PSY 07714	Statistics for Clinical Psychology I: Univariate	3
PSY 07740	Statistics for Clinical Psychology II: Multivariate and Advanced Statistics	3
PSY 02706	Research Methods	3
PSY 03815	Thesis Research	2
PSY 01855	Dissertation Research	4

Required Clinical Core Courses 21 s.h.

Course #	Course Title	S.H.
PSY 03701	Assessment I: Psychometrics and Cognitive Testing	3
PSY 03704	Assessment II: Individual Differences and Personality	3
PSY 01621	Psychopathology I: Diagnosis and Epidemiology	3
PSY 01623	Psychopathology II: Conceptualization and Etiology	3
PSY 03740	Professional, Ethical and Legal Issues in Clinical Psychology	3
PSY 03710	Intervention I: Foundational Clinical Skills	3
PSY 03712	Intervention II: Evidence-Based Interventions with Adults	3

Required Foundational Health Courses		9 s.h.
Course #	**Course Title**	**S.H.**
PSY 03830	Health Psychology	3
PSY 03838	Health Care Models and Service Delivery	3
PSY 10610	Psychopharmacology and Biological Bases of Behavior	3

Required Proseminar Sequence Courses		8 s.h.
Course #	**Course Title**	**S.H.**
PSY 03721	Professional Proseminar I	1
PSY 03722	Professional Proseminar II	1
PSY 03723	Professional Proseminar III	1
PSY 03724	Professional Proseminar IV	1
PSY 03725	Professional Proseminar V	1
PSY 03726	Professional Proseminar VI	1
PSY 03727	Professional Proseminar VII	1
PSY 03728	Professional Proseminar VIII	1

Required Clinical Practice Courses		27 s.h.
Course #	**Course Title**	**S.H.**
PSY 03742	Introductory Practicum	3
PSY 03744	Foundational Practicum I	3
PSY 03746	Foundational Practicum II	3
PSY 03748	Foundational Practicum III	3
PSY 03800	Intermediate Practicum I	3
PSY 03802	Intermediate Practicum II	3
PSY 03804	Intermediate Practicum III	3
PSY 03820	Advanced Practicum I	3
PSY 03822	Advanced Practicum II	3
PSY 03860	Internship	0

Elective Courses (Optional)		0 s.h.
Course #	**Course Title**	**S.H.**
PSY 03715	Intervention III: Evidence-Based Interventions with Children and Adolescents	3
PSY 03832	Behavioral Medicine	3
PSY 03835	Pediatric Psychology	3
PSY 03902	Advanced Seminar in Evidence-Based Practice	3
PSY 03834	Neuropsychological Assessment	3
PSY 03900	Advanced Seminar in Health Psychology and Behavioral Medicine	3
PSY 02630	Experimental Foundations of Behavior Therapy of Psychology	3
PSY 03717	Advanced Cognitive-Behavioral Assessment and Treatment	3
PSY 07745	Statistics in Clinical Psychology III - Advanced Multivariate	3

Total Required Credits for the Program	93 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and/or Thesis Requirements:

- Successful completion of internship
- Successful completion and defense of master's thesis and doctoral dissertation
- Additional benchmarks regarding professional, personal, and emotional competencies are delineated in the student handbook for the program.

Minimum Required Grades and Cumulative GPA

The Doctor of Philosophy in Clinical Psychology is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
Jim A. Haugh, Ph.D.
Robinson Hall
856.256.4500, ext.53781
clinicalpsych@rowan.edu

Doctor of Philosophy in Materials Science and Engineering (Ph.D.)

Rowan's Ph.D. Program in Materials Science Engineering is a terminal degree program that is specifically designed to meet the changing needs of researchers, scholars and scientists in academia, industry, and the government. The primary goal of this program is therefore to prepare students for careers in research and/or academics by providing an environment that closely reflects the realities and expectations encountered by today's academicians, professional scientists and research engineers. The program offers a highly flexible inter and multidisciplinary curricular structure, allowing students to focus their research in fundamental sciences or engineering. The primary strength of the program is involving students in activities that they are most likely to encounter in real-world academic or industrial settings.

Program Requirements

The following courses make up the Doctor of Philosophy in Materials Science and Engineering program.

Required Courses 15 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
MSE 00520	Thermodynamics of Materials	3
MSE 00610	Kinetics of Materials	3
MSE 00510	Structure, Symmetry and Properties of Materials	3
MSE 00530	Experimental Techniques in Materials	3
	One approved graduate-only level Math or Statistics course	3

Elective Courses 15 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
Students must choose 15 s.h. in consultation with their advisor.		
	Approved graduate-level courses from CSM or HRCOE	

Research Courses 42 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
MSE 00799	Ph.D. Dissertation Research	1-9
MSE 00798	Ph.D. Dissertation Research Continuation	1

Total Required Credits for the Program 72 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and/or Thesis Requirements:

- Completion of University's standard Ethical and Responsible Conduct of Research training.
- Regular attendance and participation in graduate seminars.
- Successful completion of Ph.D. Qualifier examination (specific details determined by advisory committee).
- Successful Completion of Ph.D. Candidacy examination (specific details determined by advisory committee).
- Successful completion of Career Preparation and Readiness Experience (specific details determined by advisory committee).
- Successful completion and defense of doctoral dissertation.

Minimum Required Grades and Cumulative GPA

The Doctor of Philosophy in Materials Science and Engineering is a Category 1 program.

For details regarding satisfactory academic progress and graduation requirements, please visit www.confluence.rowan.edu.

Program Coordinator/Advisor Contact Information

Timothy Vaden (CSM)
856.256.5457
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Wei Xue (HMRCOE)
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xuew@rowan.edu

Doctor of Philosophy in Pharmaceutical Chemistry (Ph.D.)

Rowan's Ph.D. in Pharmaceutical Chemistry is a terminal degree program that will provide students with the skills necessary to succeed in the pharmaceutical and biopharmaceutical industries. This program is highly interdisciplinary and will provide diverse research experiences for the students in: a) preparation of drugs (organic synthesis); b) chemical characterization (analytical chemistry); c) understanding the role of molecular modifications in determining structure-activity relationships (medicinal/biochemistry); d) in vitro and in vivo evaluation of biological targets (pharmacology); and e) understanding the mechanism of action and metabolism of the drug within the body (pharmacodynamics/kinetics). There will be an emphasis on independent supervised research that will culminate in significant new contributions to the field in the form of publications, presentations, or generation of new intellectual property.

Program Requirements

The following courses make up the Doctor of Philosophy in Pharmaceutical Chemistry program.

Required Courses 63 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
CHEM 07590	General Aspects of Pharmacology	3
CHEM 07592	Advanced Pharmaceutical Chemistry	3
CHEM 09601	Ph.D. Dissertation Research	Up to 48
CHEM 09602	Graduate Seminar	0

Elective Courses 9 s.h.

Choose minimum of 9 s.h. from the following options.

Course #	Course Title	S. H.
CHEM 05530	Special Topics in Chemistry	3
CHEM 06500	Modern Inorganic Chemistry	3
CHEM 06501	Modern Inorganic Chemistry Laboratory	2
CHEM 07512	Antibiotics	3
CHEM 07531	Special Topics in Biochemistry	3
CHEM 07548	Biochemistry	3
CHEM 07557	Chemical Biology	3
CHEM 07560	Advanced Biochemistry Lecture	3
CHEM 07560	Advanced Biochemistry Laboratory	3
CHEM 07564	Advanced Organic Synthesis	3
CHEM 07565	Organic Reactions and Mechanisms	3
CHEM 07567	Advanced Organic Preparations	3
CHEM 07568	Medicinal Chemistry	3
CHEM 07570	Organic Spectroscopy	3
CHEM 07572	Advanced Organometallic Chemistry	3
CHEM 07575	Polymer Chemistry	3
CHEM 07580	Synthesis of Polymers	3
CHEM 07582	Characterization of Polymers	3
CHEM 07588	Advanced Natural Product Chemistry	3
CHEM 07593	Regulatory Affairs	3
CHEM 07594	GLP/GMP Techniques	3
CHEM 08505	Advanced Biophysical Chemistry	3
CHEM 08510	Advanced Survey of Molecular Modeling Methods	3
CHEM 09510	Instrumental Analysis	4
CHEM 09520	Advanced Supramolecular Chemistry	3
CHEM 09522	Advanced Bioanalytical Chemistry	3
CHEM 09530	Advanced Chemical Analysis of Cannabinoids	3

Total Required Credits for the Program 63 s.h.

Foundation Courses

Required: Two (2) semesters of General Chemistry, Two (2) semesters of Organic Chemistry

Recommended: Analytical Chemistry/Quantitative Analysis and Biochemistry

Graduation/Exit, Benchmark, and/or Thesis Requirements:

- Completion of University's standard Ethical and Responsible Conduct of Research training.
- Regular attendance and participation in graduate seminars.
- Successful completion of Ph.D. Qualifier examination (specific details determined by advisory committee).

- Publication of at least one peer-reviewed conference or journal article or submission of at least two manuscripts to a peer-reviewed journal.
- Successful completion and defense of doctoral dissertation.

Minimum Required Grades and Cumulative GPA

The Doctor of Philosophy in Pharmaceutical Chemistry is a Category 1 program.

For details regarding satisfactory academic progress and graduation requirements, please visit www.confluence.rowan.edu.

Program Coordinator/Advisor Contact Information
Kandalam Ramanujachary
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856.256.5451
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Master's Degrees

Master of Arts in Applied Behavior Analysis (M.A.)

Applied Behavior Analysis (ABA) involves the use of well-established and empirically supported principles to address behavioral concerns and facilitate skill acquisition. ABA has been empirically shown to be effective in a wide variety of areas, and has received the most recognition for its success designing and providing behavioral supports for individuals with autism spectrum disorder (ASD) and other developmental disabilities.

The Association for Behavior Analysis International (ABAI) has verified the following courses toward the coursework requirements for eligibility to take the Board Certified Behavior Analyst® or Board Certified Assistant Behavior Analyst® examination. Applicants will need to meet additional requirements before they can be deemed eligible to take the examination.

For more information on becoming a BCBA®, see the BACB Behavior Analyst Certification Board® (BACB®) standards at www.bacb.com.

Program Requirements

Required Courses 33 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
PSY 01510	History, Philosophy & Conceptual Foundations of Behavior Analysis	3
PSY 02500	Basic Principles of Behavior	3
PSY 02610	Applied Behavior Analysis	3
PSY 02620	Behavioral Assessment & Functional Analysis	3
PSY 02510	Research Methods in Behavior Analysis	3
PSY 02670	Ethical & Legal Issues in ABA	3
PSY 02680	Advanced Practice in ABA	3
PSY 01660	Practicum in Applied Behavior Analysis I	3
PSY 01661	Practicum in Applied Behavior Analysis II	3
PSY 02671	Behavioral Consultation, Supervision, and Management	3
PSY 02710	Advanced Experimental Analysis of Behavior	3

Total Required Credits for the Program 33 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and/or Thesis Requirements

- Successful completion of all coursework with no more than two B- grades and no grade lower than B-.
- Successful completion of oral and written comprehensive exams
- Meet standards of professionalism each semester

Benchmarks: *Successful completion of all benchmarks is required for continuation in and graduation from the program. Details regarding benchmarks' timing and assessments will be shared with the student throughout the program by the Academic Advisor.*

Benchmark I:

- *Timing*: Occurs after the completion of 15 prescribed credits PSY 01510, PSY 02500, PSY 02510, PSY 02610 and PSY 02620.
- *Requirements*: Candidates must successfully complete all courses as evidenced by grades of B- or better in courses and pass comprehensive written and oral examinations with a score of 70 or better in each section before taking any

additional coursework.

- *Options*: If the student does not successfully pass the benchmark, then the student is invited to re-take any necessary coursework and/or the written/oral exam once more. If still unsuccessful, student will be dismissed from the program.

Benchmark II:

- *Timing*: Occurs at the conclusion of each semester
- *Requirements*: Candidates must meet all the requirements of the profession in terms of professional demeanor, client interaction, and ethical behavior as determined by the faculty members and clinical supervisors.
- *Options*: If the student does not successfully pass the benchmark, then they may be provided a remediation plan for professional behavior by the faculty, or they may be dismissed from the program.

Minimum Required Grades and Cumulative GPA

The Master of Arts in Applied Behavior Analysis is a Category 1 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
Michelle Ennis Soreth, Ph.D., BCBA-D
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Master of Arts in Clinical Mental Health Counseling (M.A.)

The focus of the Master of Arts in Clinical Mental Health Counseling program is on preparing students to become mental health counselors who are involved in the prevention and treatment of a wide variety of mental health problems. Many of our students apply for licensure as Licensed Associate Counselors (LAC), and then as Licensed Professional Counselors (LPC) in New Jersey and other states. With the master's degree completion, some students choose to seek research positions or pursue doctoral degrees. As such, students will receive a comprehensive background in counseling theories, empirical research findings, counseling skills, and treatment approaches necessary for the effective delivery of services in a variety of mental health settings. The program places a particular emphasis upon delivering strong skills in differential diagnosis, conceptualization, and the use of evidence-based practices, with strong studies in ethics and multicultural issues.

As part of their program, students are required to complete at least 600 hours of supervised practice in a mental health setting and complete the Counselor Preparation Comprehensive Examination (CPCE). Students may elect to substitute the CPCE with the National Counselor Examination (NCE) (this substitution is discretionary based on availability and the Program Coordinators approval). The master's program consists of 60 credit hours of graduate work, which is the educational requirement for the LAC/LPC. Students may also become involved in faculty labs, on a volunteer basis. This is valuable in gaining research experience and in further connecting with faculty.

Program Requirements

Required Courses 60 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
PSY 09595	Introduction to Counseling: Development of Basic Skills	3
PSY 01564	Counseling Theory & Techniques I	3
PSY 01566	Counseling Theory & Techniques II	3
PSY 01572	Research Methods & Statistics in Counseling Psychology I: Basics	3
PSY 01574	Research Methods & Statistics in Counseling Psychology II: Applied	3
PSY 01612	Group Counseling & Psychotherapy	3
PSY 01615	Professional Pro-Seminar	1
PSY 01620	Legal, Ethical & Professional Issues in Counseling	3
PSY 01623	Psychopathology I: Diagnosis & Epidemiology	3
PSY 01624	Psychopathology II: Conceptualization & Etiology	3
PSY 01650	Practicum in Counseling	8
PSY 01685	Master's Thesis in Psychology I*	3
PSY 01687	Master's Thesis in Psychology II*	3
PSY 05610	Social & Cultural Diversity	3
PSY 05652	Advanced Seminar in Clinical Practice**	9
PSY 06625	Assessment I: Psychometrics, Evaluation, & Treatment Planning	3
PSY 06626	Assessment II: Assessment of Career/Vocational Interests, Treatments, & Programs	3
PSY 09560	Lifespan Development	3
PSY 10610	Psychopharmacology & Biological Bases of Behavior	3

* Note: The Thesis Track is currently unavailable. However, there are limited opportunities for students to be involved in a research lab. Contact the program coordinator for additional details.
**Topics for the Advanced Seminar in Clinical Practice rotate at the Program Coordinator's discretion. All students take 9 elective credits. If the Thesis Track becomes available (in rare circumstances), 6 of these credits will be replaced with Master's Thesis I and II.

Total Required Credits for the Program 60 s.h.

Foundation Courses

Students must have successfully completed at least 12 credits of undergraduate-level Psychology courses at an accredited institution, including one course in Abnormal Psychology, one course in Statistics, and one course in Research Methods.

Graduation/Exit, Benchmark, and/or Thesis Requirements

- All students are required to take the Counselor Preparation Comprehensive Examination (CPCE) during their second year in the program (or the equivalent for students who are part-time). Students may replace this exam with the National Counselor Examination (NCE). Students are responsible for the cost of the selected exam (this substitution is discretionary based on availability and the Program Coordinators approval).

Benchmarks: *Successful completion of all benchmarks is required for continuation in and graduation from the program. Details regarding benchmarks' timing and assessments will be shared with the student throughout the program by the Program Coordinator.*

Benchmark I:

- *Timing*: Occurs before, or at, the conclusion of each semester
- *Requirements*: Candidates must meet all of the requirements of the profession in terms of professional demeanor, client and faculty interaction, and ethical behavior, as determined by the Program Coordinator, Thesis Advisors (where indicated), Faculty Members and both on- and off-site Practicum Supervisors. The adherence to professional standards is including, but not limited to, abiding by the NBCC Code of Ethics and NJ Professional Counselor Committee Laws and Regulations. In addition, students must exhibit psychological and professional readiness for counselors-in-training.
- *Options*: If a student does not successfully pass the benchmark, the student may be provided a remediation plan for professional behavior by the Program Coordinator, or may be dismissed from the program.

Benchmark II:

- *Timing*: Occurs after the completion of 28 prescribed credits (Year I-including Summer)
- *Requirements*: Candidates must successfully complete all Year I courses (including Summer) and secure a practicum location. In addition, students in the Thesis Track must also formulate a suitable thesis topic (with approval of their Thesis Advisors) by the end of the Summer term of their first year. Students need to discuss details with their Thesis Advisors and the Program Coordinator. As noted above, Thesis Track is currently unavailable.
- *Options*: If a student does not successfully pass the benchmark, the student may be invited to re-take any necessary coursework, dependent upon review of overall academic achievement and personal and professional conduct. The student may be advised on the possibility of extensions regarding timing of thesis formulation and practicum placement, dependent upon overall progress and movement toward these goals.

Benchmark III:

- *Timing*: Occurs after the completion of 60 prescribed credits (Year II)
- *Requirements*: Candidates in the Thesis Track must successfully defend their Master's Theses (including Master's Thesis II course). Candidates in the Advanced Clinical Track must successfully complete the additional coursework (6 credits of Advanced Clinical Seminar). Candidates in both tracks must complete 600 hours of practicum experience with satisfactory supervisory evaluations.
- *Options*: If a student does not successfully pass the benchmark, the student may be invited (at the Program Coordinator and Practicum Coordinator's discretion) to re-take any necessary coursework (including Practicum), and/or resubmit the Master's Thesis and defense. If remedial efforts are still unsuccessful, the student may be dismissed from the program.

Minimum Required Grades and Cumulative GPA

The Master of Arts in Clinical Mental Health Counseling is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
cmhc@rowan.edu

Master of Arts in School Psychology (M.A.)

Completion of the Master of Arts (M.A.) in School Psychology provides a background in the theories, major knowledge, and methodological procedures in school psychology. This program (or its equivalent) is required for admission into the Educational Specialist (Ed.S.) program. The Master of Arts and Educational Specialist in School Psychology combine to meet the requirements for NJ Department of Education certification in School Psychology†.

Program Requirements

Required Courses 33 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
COUN 26509	Group Counseling in Educational Settings	3
COUN 26526	Individual Counseling Procedures	3
LDTC 18520	Neurological Bases of Educational Disorders	3
PSY 01570	Research Methodology and Statistics in Counseling Psych	3
PSY 03624	Psychopathology of Childhood & Adolescence	3
PSY 05610	Social and Cultural Diversity	3
or COUN 26525	Multicultural Counseling	
PSY 06533	Test & Measurements	3
PSY 22507	Development & Learning	3
PSY 09560	Lifespan Development	
PSY 22600	Seminar I: App Res in School Psychology	3
or SPSY 22600	Applied Research Seminar I: School Psychology	
PSY 22601	Seminar II: App Res in School Psychology	3
or SPSY 22601	Applied Research Seminar II: School Psychology	
SPED 08555	Educational Psychology of the Exceptional Learner	3

Total Required Credits for the Program 33 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and/or Thesis Requirements

- Successful completion of comprehensive exam (no thesis required)

Minimum Required Grades and Cumulative GPA

The Master of Arts in School Psychology is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information

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Master of Arts in Mathematics (M.A.)

The Master of Arts in Mathematics program will provide an opportunity for individuals to pursue advanced study in mathematics and statistics as well as to develop skills that can lead to success in today's technologically oriented society. Whether the goal involves applying mathematics and statistics to solve problems in business or industry, teaching in higher education, or preparing for further graduate study in mathematics or related fields, this program enables each student to pursue a course of study that is appropriate for his or her interests.

The program requires students to complete 30 semester hours of work in one of the three concentrations:

- Pure Mathematics
- Applied Mathematics
- Statistics

Each has its own course and graduation exit requirements, as outlined below.

Rowan University undergraduates majoring in the Bachelor of Science in Mathematics can apply to the accelerated B.S./M.A. dual degree (4+1) program allowing them to earn both the Bachelor of Science and Master of Arts degrees in five years.

Program Requirements

Required CORE Courses for all Concentrations 9 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
MATH 01502	Linear Algebra and Matrix Theory	3
MATH 01505	Probability & Mathematical Statistics I	3
MATH 01533	Graduate Seminar in Mathematics	3
or MATH 03612	Master's Thesis (Thesis option)	3

Pure Mathematics Concentration (Required Courses) 9 s.h.

Course #	Course Title	S.H.
MATH 01510	Real Analysis I	3
MATH 01512	Complex Analysis I	3
MATH 01524	Abstract Algebra I	3

Restricted Electives 3 s.h.

Course #	Course Title	S.H.
MATH 01511	Real Analysis II	3
MATH 01513	Complex Analysis II	3
MATH 01527	Abstract Algebra II	3

Free Electives (see below) 9 s.h.

Applied Mathematics Concentration (Required Courses) 6 s.h.

Course #	Course Title	S.H.
MATH 01520	Topics in Applied Mathematics	3
MATH 01529	Numerical Analysis	3

Restricted Electives 6 s.h.

Course #	Course Title	S.H.
MATH 03501	Mathematical Modeling for Biological Systems	3
MATH 03511	Operations Research I	3
MATH 01521	Non-Linear Differential Equations	3
MATH 03525	Partial Differential Equations for Biomathematics	3
STAT 02513	Applied Stochastic Processes	3
CS 04548	Programing Languages: Theory, Implementation, and Application	3

Free Electives (see below) 9 s.h.

Statistics Concentration (Required Courses) 9 s.h.

Course #	Course Title	S.H.
STAT 02510	Introduction to Statistical Data Analysis	3
STAT 02515	Applied Multivariate Data Analysis	3
STAT 02511	Statistical Computing	3

Restricted Electives 6 s.h.

Course #	Course Title	S.H.
STAT 02513	Applied Stochastic Processes	3

STAT 02525	Design and Analysis of Experiments	3
STAT 02530	Applied Survival Analysis	3
MATH 01506	Probability and Mathematical Statistics II	3
STAT 02585	Introduction to Bayesian Statistical Methods	3
Free Electives (see below)		6 s.h.

Free Elective Bank for all Concentrations

The required and restrictive elective courses in one concentration will be considered as free electives for the other concentrations. In addition to these, the following can also be taken as free electives (9 s.h. for each of Pure and Applied Mathematics, and 6 s.h. for Statistics).

Course #	Course Title	S.H.
MATH 01500	Foundations of Mathematics	3
MATH 01503	Number Theory	3
MATH 01504	Introduction to Mathematical Logic	3
MATH 01507	Differential Geometry	3
MATH 01515	Engineering Applications of Analysis	3
MATH 01522	History of Mathematics	3
MATH 01523	Selected Topics in Mathematics	3
MATH 01525	Modern Geometry	3
MATH 01526	Point Set Topology	3
MATH 01603	Analytic Number Theory	3
MATH 03550	Topics in Discrete Mathematics	3
MATH 03611	Special Topics in Biomathematics	3
STAT 02514	Decision Analysis	3
MATH 03610	Applied Statistical Epidemiology	3
MATH 03512	Operations Research II	3
Total Required Credits for the Program		30 s.h.

Foundation Courses

Applicants are expected to have completed at least 16 semester credits at the undergraduate-level in Mathematics including subjects such as Calculus through Vector Analysis and Linear Algebra.

Additionally, applicants interested in pursuing a concentration must complete the following:

- Pure Mathematics concentration: Applicants must have completed Differential Equations in addition to upper-level undergraduate mathematics including Modern Algebra and Introduction to Real Analysis.
- Applied Mathematics concentration: Applicants must have completed Differential Equations. Computer programming skills are highly recommended.
- Statistics concentration: Applicants must have completed a basic statistics course.

Graduation/Exit, Benchmark, and/or Thesis Requirements

- All students must complete all course requirements for their respective Concentration.
- All students must pass a comprehensive examination or complete a thesis.

Minimum Required Grades and Cumulative GPA

The Master of Arts in Mathematics is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
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Master of Science in Bioinformatics (M.S.)

The Master of Science in Bioinformatics (M.S.) produces highly trained students who are prepared to immediately contribute in the pharmaceutical, biotechnology, and biomedical fields. Bioinformatics is a multidisciplinary field of study that focuses on the use of computational information tools in the investigation and analysis of biological, biomedical, and biochemical systems. The goal of the field is to use information generated in the lab or clinic for future applications, research, and development.

The M.S. in Bioinformatics at Rowan University provides hands-on experience so students can perform novel research. This includes advanced training in theory and laboratory settings to allow students to diversify into other biomedical research fields. This program includes the following three (3) focus areas: Biological Sciences, Biochemistry, Computer Science.

Curriculum

The M.S. in Bioinformatics program consists of 30 semester hours (s.h.). Both a thesis and a non-thesis track are available.

Coursework

The following courses make up the M.S. in Bioinformatics program.

Required Courses: Students must take 4 Required Courses, 12 semester hours (s.h.)

Restricted Electives: 3–18 semester hours (s.h.)

- Choose 3–6 s.h. (thesis track) or 18 s.h. (non-thesis track) of restricted elective courses

Thesis Coursework: 12-15 semester hours (s.h.)

- Thesis students select 12-15 semester hours, in consultation with their academic advisor.
- Non-thesis students select 0 semester hours.

Rowan University undergraduates majoring in the Bachelor of Science in Bioinformatics program can apply to the accelerated Bachelor of Science/Master of Science dual degree (4+1) program, allowing them to earn both the Bachelor of Science and Master of Science degrees in five years.

Program Requirements

Required Courses 12 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
BINF 05555	Bioinformatics: Advanced Biological Applications	3
BINF 07595	Bioinformatics: Advanced Biochemical Applications	3
CS 01541	Bioinformatics: Advanced Computational Aspects	3
BINF 07500	Bioinformatics Seminar	3

Restricted Electives

Choose 3-6 s.h. (thesis track) or 18 s.h. (non-thesis track) from the following depending on focus area selected:

Department of Chemistry and Biochemistry

Course #	Course Title	S.H.
CHEM 07531	Special Topics in Biochemistry	3
CHEM 07570	Organic Spectroscopy	3
CHEM 07568	Medicinal Chemistry	3
CHEM 07557	Chemical Biology	3
CHEM 07560	Advanced Biochemistry Lecture	3
CHEM 09510	Instrument Analysis	4
CHEM 07592	Advanced Pharmaceutical Chemistry	3
CHEM 08505	Advanced Biophysical Chemistry	3
CHEM 07590	General Aspects of Pharmacology	3
CHEM 08510	Advanced Survey of Molecular Modeling Methods	3

Department of Computer Science

Course #	Course Title	S.H.
CS 04530	Advanced Database Systems: Theory and Programming	3
CS 07570	Information Visualization	3
CS 07556	Machine Learning	3
CS 02505	Data Mining I	3
DA 02510	Visual Analytics	3
CS 02605	Data Mining II	3
CS 03505	Data Quality and Web/Text Mining	3
CS 01501	Essentials of Computer Science	3

Department of Molecular and Cellular Biosciences

Course #	Course Title	S.H.
MCB 01538	Graduate Immunology	4
MCB 01506	Graduate Translational Cell Biology	3
MCB 01507	Advanced Molecular Microbiology	4
MCB 01508	Advanced Topics in Molecular & Cellular Biosciences	3
MCB 01521	Graduate Cell Culture Techniques	4
MCB 01550	Graduate Molecular Genetics	4
MCB 01514	Infectious Agents	3
MCB 01571	Advanced Biophysics: Fundamentals of Biomaterials	3
MCB 02560	Advanced Molecular Biophysics	3
BINF 05560	Advanced Programming for Molecular Biology	3
BINF 07510	Bioinformatics	3
TBS 01570	Advanced Topics Biomedical Instrumentation	3
Thesis Coursework		9 - 12 s.h.
Course #	Course Title	S.H.
BINF 07501	MS Thesis Research 1	3
BINF 07502	MS Thesis Research 2	3
BINF 07503	MS Thesis Research 3	3
BINF 07504	MS Thesis Research 4	3
BINF 07505	MS Thesis Research 5	3
Total Required Credits for the Program		30 s.h.

Foundation Courses

Applicants must have successfully completed the following courses at an accredited institution: Calculus I, Statistics I, and at least two semesters of Chemistry, Physics, Biology, and/or Computer Science. To prepare students for focus area electives, students may be advised to take one or more undergraduate courses in their concentration area in consultation with the Program Advisor.

Graduation/Exit, Benchmark, and/or Thesis Requirements

All thesis track students must conduct a formal seminar presenting their research or about a focus area topic. If thesis track is chosen, students must successfully complete and defend a Master's Thesis based on work done in their coursework with a Research Advisor.

Minimum Required Grades and Cumulative GPA

The Master of Science in Bioinformatics is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Academic Advisor
Benjamin Carone
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Master of Science in Computer Science (M.S.)

The Master of Science in Computer Science will provide individuals with the opportunity to acquire an excellent graduate level education in Computer Science that prepares them to work in a variety of computer related fields, including education, industry, research, business, and government.

The M.S. in Computer Science is designed for individuals with a B.S. in Computer Science who are looking to expand their knowledge and opportunities. Students with a bachelor's degree in another discipline may also apply for the M.S. in Computer Science after meeting certain eligibility criteria. This degree can be completed as a full-time or part-time student. Most classes are offered in the evening to enable students to complete their degree while working.

Rowan University undergraduates majoring in the Bachelor of Science in Computer Science program may apply to the Combined Advanced Degree (4+1) program which allows them to earn both the Bachelor of Science and Master of Science degrees in five years instead of six.

The M.S. in Computer Science is a 30 credit-hour program with an optional thesis track. Ten distinct courses must be taken to fulfill the Master's Degree. Any course taken that belongs in multiple categories cannot double count. Up to two courses may be taken from other, appropriate graduate programs subject to advisor approval, provided all requirements for this M.S. degree are fulfilled.

Tracks

The program includes two tracks - a thesis track and a non-thesis track.

- **Non-Thesis Track:** Students choosing the non-thesis track take 30 credits of traditional (non-thesis) courses.
- **Thesis Track:** Students choosing the thesis track will also take 30 credits, but they will substitute between 6 to 9 credits of thesis courses for traditional (non-thesis) courses.

Algorithms Core

- All students must complete a 3 credit Algorithms Core course.

Common Core

- All students must complete nine (9) credits of Common Core courses.

Advanced Courses

- All students must complete nine (9) credits of advanced (600 level) courses. Thesis ll and Thesis lll courses will fulfill this requirement for thesis-track students.

Program Requirements

Required Course in Algorithms — 3 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
CS 07540	Advanced Design & Analysis of Algorithms	3

Common Core Courses — 9 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.

Students are required to complete at least one (1) course from any three (3) Common Core Areas listed below.

Algorithms and Theory

CS 07510	Mathematical Foundations of Computer Science	3
CS 07556	Machine Learning I	3
CS 07622	Advanced Theory of Computing	3
CS 07650	Concepts in Artificial Intelligence	3
CS 07652	Cryptographic Algorithms*	3
CS 07656	Machine Learning II	3

Software Design

CS 04515	Embedded Systems Programming	3
CS 04524	Agile Software Engineering	3
CS 04563	Concurrent Programming – Theory and Practice	3
CS 04623	Advanced Software Engineering	3
CS 04670	Advanced Object-Oriented Design	3

Cyber Security

CS 03551	Advanced Cyber Security: Principles & Applications	3
CS 03570	Cyber Defense of Operating Systems and Networks	3

CS 03580	Cloud Computing and the Internet of Things – Architectures and Security*	3
CS 07652	Cryptographic Algorithms*	3
CS 09612	Network Security*	3

Data Management and Analytics

CS 02505	Data Mining I	3
CS 02530	Advanced Database Systems: Theory & Programming	3
CS 02605	Data Mining II	3
CS 02620	Data Warehousing	3
CS 02625	Data Quality & Web Text Mining	3
CS 02630	Advanced Topics in Database Systems	3

Computer Networks

CS 03580	Cloud Computing and the Internet of Things – Architectures and Security*	3
CS 09510	Computer Networks	3
CS 09605	Wireless Networks & Systems	3
CS 09612	Network Security*	3
CS 09675	Advanced TCP/IP & Internet Protocols & Technologies	3

*Course may count for one of two core areas but cannot count for both core areas.

Advanced Elective Courses 9 s.h.

In addition to the 12 credits in the Core Areas, students must complete three (3) 600-level courses.

Course #	Course Title	S.H.
	600-level courses can be selected from the Non-Thesis Track Courses below or from the five (5) Core Areas listed above	9

Thesis Track Courses 6-9 s.h.

Thesis Track students may take either six (6) credits of thesis and one (1) elective or they may take nine (9) credits of thesis.

Course #	Course Title	S.H.
CS 07530	Computer Science Thesis I	3
CS 07631	Computer Science Thesis II	3
CS 07632	Computer Science Thesis III *(optional)*	3

Non-Thesis Track Elective Courses 9 s.h.

Students must take nine (9) credits of electives; they may not take any thesis courses. Electives can be chosen from the core banks as well.

Course #	Course Title	S.H.
CS 01541	Bioinformatics – Advanced Computational Aspects	3
CS 02570	Information Visualization	3
CS 04548	Programming Languages: Theory, Implementation & Application	3
CS 04564	Compiler Design Theory	3
CS 04565	System Programming	3
CS 04571	Advanced Topics in Mobile Programming	3
CS 04590	Computer Game Design & Development	3
CS 04605	Advanced Web Programming	3
CS 06520	Topics in Computer Architecture	3
CS 06560	Design & Implementation of Operating Systems	3
CS 07565	Computer Vision	3
CS 07595	Advanced Topics in Computer Science	3
CS 07645	Advanced Robotics	3
CS 07655	Natural Language Processing	3
CS 08560	Computer Graphics	3
CS 08680	Computer Animation	3

Total Required Credits for the Program 30 s.h.

Foundation Courses

Students accepted into the program are expected to be well versed in programming, discrete mathematics, computer organization/architecture, direct interactions with operating systems, data structures, and algorithmic thinking either

through undergraduate course work or work experience. At the discretion of the Program Coordinator, students not meeting all of these criteria ***may*** be accepted into this master's program but will be required to complete one or two computer science bridge courses before enrolling into other computer science graduate courses. These courses are:

- CS 01501 Essential of Computer Science I*
- CS 01502 Essentials of Computer Science II*

*CS 01501 and CS 01502 will not count toward the 30 graduate credits needed for degree completion.

Graduation/Exit, Benchmark, and/or Thesis Requirements

If thesis track is chosen, students must successfully complete and defend Master's Thesis.

Minimum Required Grades and Cumulative GPA

The Master of Science in Computer Science is a Category 3 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
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Master of Science in Cybersecurity (M.S.)

The Master of Science in Cybersecurity is designed to prepare students with the knowledge and skills need to understand key issues along with present and emerging cyber threats to information systems.

Program Requirements

The M.S. in Cybersecurity is a 30 credit-hour program. All students must complete 6 credits of foundation courses (2 courses) and 9 credits of core courses (3 courses). The credits for this program are structured as follows:

Computer Science Foundation Courses — 6 s.h.

Course #	Course Title	S.H.
CS 01501	Essentials of Computer Science I	3
CS 01502	Essentials of Computer Science II	3

Cybersecurity Required Core Courses — 9 s.h.

Course #	Course Title	S.H.
CS 03500	Foundations of Cybersecurity	3
CS 03506	Cybersecurity Management, Policy, and Risk	3
CS 03570	Cyber Defense of Operating Systems and Networks	3

Students will be required to take one 3-credit course in strategic writing and one of 3 additional course options.

Business Skills for IT Professionals — 6 s.h.

Course #	Course Title	S.H.
MAPR 01547	Graduate Strategic Writing	3

Choose one (1) from the following options.

Course #	Course Title	S.H.
MAPR 01561	Graduate Strategic Writing II	3
MGT 06521	Leadership Theory and Practice	3
MGT 07600	Predictive Analytics	3

Cybersecurity Elective Courses — 9 s.h.

Choose three (3) from the following options.

Course #	Course Title	S.H.
CS 03580	Cloud Computing and the Internet of Things – Architectures and Security	3
CS 03551	Advanced Cybersecurity Principles and Applications	3
CJ 09515	Law and Society	3
CS 09612	Network Security	3
CS 07652	Cryptographic Algorithms	3
CS 09510	Computer Networks	3

CS 03695	Advanced Topics in Cybersecurity	3
MIS 02530	Information Security for Managers	3

Total Required Credits for the Program 30 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and Thesis Requirements None

Minimum Required Grades and Cumulative GPA

The Master of Science in Cybersecurity is a Category 3 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
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Master of Science in Data Science (M.S.)

The Master of Science in Data Science at Rowan University is designed for individuals with a Bachelor's degree in a STEM related field who are looking to expand their knowledge and opportunities in Data Science. The program has a strong background in Data Mining, Modeling, Statistical and Machine learning, but also includes potential concentrations in Health Data Analytics or Business Data Analytics for students with those interests. If no concentration is chosen, there are a variety of electives so that students can increase their knowledge of Computer Science, Statistics, or Visual Analytics.

The program is based on industry needs, as well as guidelines of the Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM) and of the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET). Students will be prepared to use algorithms, statistics, and technology to make informed decisions from massive amounts of data, to manage streamed data or data stored in massive data warehouses, and to visually analyze and present information. Courses are designed to provide expertise in the data sciences and train students to solve problems with complex sets of structured and unstructured data commonly found in any industry.

Program Requirements

The Master of Science in Data Science program consists of 10 courses totaling 30 graduate semester hours (s.h.). Students may enroll in this program part-time or full-time.

Coursework

The following courses make up the Master of Science in Data Science program.

- **Required Courses:** 12 semester hours (s.h.)
- **Concentration and Elective Courses:** 18 semester hours (s.h.)

Required Courses 12 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
DS 02510	Visual Analytics	3
CS 02620	Data Warehousing	3
CS 02505	Data Mining I	3
STAT 02515	Applied Multivariate Data Analysis	3

Health Data Analytics Leading Concentration Courses 18 s.h.

Course #	Course Title	S.H.
CS 02625	Data Quality and Web/Text Mining	3
DA 03510	Patient Data Understanding	3
DA 03520	Healthcare Management	3
DA 01505	Data Analytics Capstone Practicum	3
	Choose 2 courses from Elective Bank below	6

Business Data Analytics Concentration 18 s.h.

Course #	Course Title	S.H.
STAT 02525	Design and Analysis of Experiments	3
MGT 07500	Managerial Decision-Making Tools	3

MGT 07600	Predictive Analytics	3
DA 01505	Data Analytics Capstone Practicum	3
	Choose 2 courses from Elective Bank below	6
No Concentration		18 s.h.

Students who do not wish to declare a concentration in Data Science must take the Data Science Capstone Experience and five (5) courses from the elective bank.

Course #	Course Title	S.H.
DA 01505	Data Analytics Capstone Practicum	3
	Choose 5 courses from Elective Bank below	15

Elective Bank

Course #	Course Title	S.H.
CS 02630	Advanced Topics in Database Systems	3
CS 02530	Advanced Database Systems: Theory and Programming	3
CS 07540	Advanced Design and Analysis of Algorithms	3
CS 07556	Machine Learning	3
CS 02570	Information Visualization	3
CS 02605	Data Mining II	3
CS 02625	Data Quality and Web/Text Mining	3
DA 03510	Patient Data Understanding	3
DA 03511	Patient Data Privacy & Ethics	3
DA 03520	Healthcare Management	3
DS 02695	Advanced Topics in Data Science	3
ECE 09555	Advanced Topics in Pattern Recognition	3
MGT 07500	Managerial Decision-Making Tools	3
MGT 07600	Predictive Analytics	3
STAT 02514	Decision Analysis	3
STAT 02525	Design and Analysis of Experiments	3
STAT 02530	Applied Survival Analysis	3
Total Required Credits for the Program		30 s.h.

Foundation Courses

Applicants must have successfully completed the following courses (or their equivalents) at an accredited institution: Calculus II, Probability and Statistical Inference for Computing Systems, Linear Algebra, Introduction to Object-Oriented Programming or Computer Science and Programming, and Data Structures and Algorithms or Data Structures for Engineers.

Graduation/Exit, Benchmark, and/or Thesis Requirements

A four (4) credit Capstone Practicum is required as part of the coursework.

Minimum Required Grades and Cumulative GPA

The Master of Science in Data Science is a Category 3 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
Anthony Breitzman
Robinson Hall, Room 328P
breitzman@rowan.edu

Master of Science in Pharmaceutical Sciences (M.S.)

Pharmaceutical Sciences is a highly interdisciplinary field that involves the integration of concepts from organic chemistry, biochemistry, physiology, pharmacology, and molecular biology for the design and synthesis of drugs as well as for understanding the mechanism of drug action. Some of the primary goals of pharmaceutical sciences involve the discovery and development of novel drugs, efficient use of existing drugs, and lowering the cost of therapy employing cheaper protocols for manufacturing the drugs. The Master of Science (M.S.) in Pharmaceutical Sciences will provide the students with a solid foundation in basic chemistry and its applications in pharmaceutical sciences especially in the areas of research and development. Students will graduate with the necessary knowledge, skill sets, and training to effectively contribute to the development and characterization of new therapies for human disease and will be prepared for a career in pharmaceutical or biomedical research.

Tracks

The program includes two tracks. Each has different course and graduation exit requirements which are outlined below.

- **Thesis Track:** The thesis track is for students who desire to perform research as part of their graduate education. Thesis Track students enroll in 25 core s.h. (including 9 s.h. of research) and 6 restricted elective s.h. These students must enroll full-time. This track is a Fellows-Eligible program and the students are considered for a Graduate Fellowship award.
- **Non-Thesis Track:** Non-thesis Track students enroll in 16 core s.h. and 15 restricted elective s.h. These students may enroll either part-time or full-time.

Program Requirements

Required Courses 31 s.h.

(s.h.: semester hours/credit hours)

Non-Thesis Track 31 s.h.

Course #	Course Title	S.H.
CHEM 05530	Special Topics in Chemistry	3
CHEM 05550	Advanced Seminar	1
CHEM 07560	Advanced Biochemistry Lecture	3
CHEM 07564	Advanced Organic Synthesis	3
CHEM 07590	General Aspects of Pharmacology	3
CHEM 07592	Advanced Pharmaceutical Chemistry	3

Choose an additional 15 s.h. from the list of Restricted Electives below.

Thesis Track 31 s.h.

Course #	Course Title	S.H.
CHEM 05550	Advanced Seminar	1
CHEM 07560	Advanced Biochemistry Lecture	3
or CHEM 07564	Advanced Organic Synthesis	
CHEM 07592	Advanced Pharmaceutical Chemistry	3
CHEM 09592	Pharmaceutical Techniques I	9-12
CHEM 09596	MS Thesis Research I	9-12

Choose an additional 6 s.h. from the list of Restricted Electives below.

Restricted Elective Courses

Course #	Course Title	S.H.
CHEM 05530	Special Topics in Chemistry	3
CHEM 06500	Modern Inorganic Chemistry	3
CHEM 06501	Modern Inorganic Chemistry Laboratory	2
CHEM 07512	Antibiotics	3
CHEM 07557	Chemical Biology	3
CHEM 07561	Advanced Biochemistry Lab	3
CHEM 07565	Organic Reactions and Mechanisms	3
CHEM 07567	Advanced Organic Preparations (Lecture & Lab)	3
CHEM 07568	Medicinal Chemistry	3
CHEM 07570	Organic Spectroscopy	3
CHEM 07572	Advanced Organometallic Chemistry	3
CHEM 07588	Advanced Natural Products Chemistry	3
CHEM 07590	General Aspects of Pharmacology	3
CHEM 07593	Regulatory Affairs	3
CHEM 07594	Good Laboratory Practice (GLP)/Good Manufacturing Practice (GMP) Techniques	3

CHEM 08505	Advanced Biophysical Chemistry	3
CHEM 08510	Advanced Survey of Molecular Modeling Methods	3
CHEM 09510	Instrumental Analysis	3
CHEM 09520	Advanced Supramolecular Chemistry	3
CHEM 09522	Advanced Bioanalytical Chemistry	3
CHEM 09530	Advanced Chemical Analysis of Cannabinoids	3
Total Required Credits for the Program		31 s.h.

Foundation Courses

Applicants must have successfully completed the following courses at an accredited institution prior to enrolling: 2 semesters of General Chemistry, and 2 semesters of Organic Chemistry. Additionally, it is recommended that students have taken as part of their undergraduate coursework: Physical Chemistry, Inorganic Chemistry, Analytical Chemistry, and Biochemistry.

Graduation/Exit, Benchmark, and/or Thesis Requirements

If thesis track is chosen, students must successfully complete and defend a Master's Thesis based on the original research performed under the guidance of their Graduate Research Advisor.

Minimum Required Grades and Cumulative GPA

The Master of Science in Pharmaceutical Sciences is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
Kandalam Ramanujachary
Science Hall
856.256.5451
mspharma@rowan.edu

Certificates of Advanced Graduate Study (Non-degree)

Certificate of Advanced Graduate Study in Applied Behavior Analysis (CAGS)

Applied Behavior Analysis (ABA) involves the use of well-established and empirically supported principles to address behavioral concerns and facilitate skill acquisition. ABA has been empirically shown to be effective in a wide variety of areas, and has received the most recognition for its success designing and providing behavioral supports for individuals with autism spectrum disorder (ASD) and other developmental disabilities.

The Association for Behavior Analysis International (ABAI) has verified the following courses toward the coursework requirements for eligibility to take the Board Certified Behavior Analyst® examination. Applicants will need to meet additional requirements before they can be deemed eligible to take the examination.

Students applying to this program must possess a minimum of a master's degree from an accredited university. The Certificate of Advanced Graduate Study in ABA program does not provide the supervised experience requirement for eligibility to take the BCBA® exam. For more information on these requirements, please visit the Behavior Analyst Board Certification (BACB@), Inc. at www.bacb.com.

Program Requirements

Required Courses 24 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
PSY 01510	History, Philosophy and Conceptual Foundations of Behavior Analysis	3
PSY 02500	Basic Principles of Behavior	3
PSY 02620	Behavioral Assessment & Functional Analysis	3
PSY 02610	Applied Behavior Analysis	3
PSY 02670	Ethical & Legal Issues in ABA	3
PSY 02510	Research Methods in Behavior Analysis	3
PSY 02680	Advanced Practice in ABA	3
PSY 02671	Behavioral Consultation, Supervision and Management	3
Total Required Credits for the Program		24 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and/or Thesis Requirements

- Successful completion of all coursework with no more than two B- grades, and no grade lower than B-
- Successful completion of oral and written comprehensive exams
- Meet standards of professionalism each semester

Benchmarks: *Successful completion of all benchmarks is required for continuation in and graduation from the program. Details regarding benchmarks' timing and assessments will be shared with the student throughout the program by the Academic Advisor.*

Benchmark I:

- *Timing*: Occurs after the completion of 15 prescribed credits PSY 01510, PSY 02500, PSY 02510, PSY 02610 and PSY 02620.
- *Requirements*: Candidates must successfully complete all courses as evidenced by grades of B- or better in courses and pass the written and oral comprehensive exams with a score of 70 or better in each section.
- *Options*: If the student does not successfully pass the benchmark, then the student is invited to re-take any necessary coursework and/or the student is able to re-take the exam once more. If still unsuccessful, student will be dismissed from the program.

Benchmark II:

- *Timing*: Occurs at the conclusion of each semester
- *Requirements*: Candidates must meet all the requirements of the profession in terms of professional demeanor, client interaction, and ethical behavior as determined by the faculty members and off-site clinical supervisors.
- *Options*: If the student does not successfully pass the benchmark, then the student may be provided a remediation plan for professional behavior by the faculty, or they may be dismissed from the program.

Minimum Required Grades and Cumulative GPA

The Certificate of Advanced Graduate Study in Applied Behavior Analysis is a Category 1 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
Michelle Ennis Soreth, Ph.D., BCBA-D
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abacoursework@rowan.edu

Certificate of Advanced Graduate Study in Clinical Mental Health Counseling (CAGS)

The Certificate of Advanced Graduate Study (CAGS) in Clinical Mental Health Counseling is intended for individuals who have already completed a master's degree in counseling (or related field) and need additional graduate coursework in order to have the sixty credits required for state licensure as Licensed Associate Counselors (LAC), followed by licensure (after completing necessary clinical experience) as Licensed Professional Counselors (LPC). Additionally, the program is available for mental health professionals in the community seeking to enhance their professional development. The courses within the certificate program are intended to be advanced courses within the clinical mental health profession that will allow students to improve their practical knowledge and skills. Candidates seeking licensure are advised to read the regulations and requirements of the state's board where they intend to practice. The NJ Board of Licensed Professional Counselor regulations can be found at: http://www.njconsumeraffairs.gov/pc/Pages/default.aspx.

Students typically complete 12 semester hours of graduate credits in classes taught by the Clinical Mental Health Counseling Program within the Department of Psychology in order to bring their total credits to the state requirement of 60. (Note: Some states may require that the master's degree have the words "counseling" or "counselor" in the title and/or be from a CACREP-accredited institution).

The 12 semester hours may be completed by taking a combination of courses within the Certificate of Advanced Graduate Study program. However, individual courses may have prerequisites associated with them. Given that some degrees total more or less than 48 credits, we occasionally accept individuals who request more (or less) than 12 semester hours and/or specific courses that are normally part of our own master's degree program. Any exceptions should be discussed with the Program Coordinator.

Students who simply need particular coursework (e.g., to obtain the sixty credits required for state licensure (LAC/LPC) and/or national certification/personal growth, etc.) may register for up to 9 graduate credits as non-matriculated students to meet their own individual needs. If additional credits are needed, students should matriculate in the program. Please note: It is highly recommended that all Certificate of Advanced Graduate Study students seek to matriculate.

Please consult with the Program Coordinator to discuss your enrollment needs.

Program Requirements

Required Courses 12 s.h.

(s.h.: semester hours/credit hours)

Please meet with the Certificate of Advanced Graduate Study Program Coordinator to develop a course sequence from the following potential courses (dependent upon availability and prerequisites). Note: Some courses are offered on rotation, and additional elective courses may be added periodically.

Course #	Course Title	S.H.
PSY 01620	Legal, Ethical & Professional Issues in Counseling	3
PSY 01623	Psychopathology I: Diagnosis & Epidemiology	3
PSY 01624	Psychopathology II: Conceptualization & Etiology	3
PSY 01630	Family Systems & Family Therapy	3
PSY 05610	Social & Cultural Diversity	3
PSY 05652	Adv. Sem. in Clinical Practice: Evidence-Based Counseling for Children/Adolescents	3
PSY 05652	Adv. Sem. in Clinical Practice: Trauma	3
PSY 06625	Assessment I: Psychometrics, Evaluation & Treatment Planning	3
PSY 06626	Assessment II: Assessment of Career/Vocational Interests, Treatments & Programs	3
PSY 10610	Psychopharmacology & Biological Bases of Behavior	3

Total Required Credits for the Program 12 s.h.

Foundation Courses

While the courses have no official prerequisites, it is recommended that students speak with the Program Coordinator to determine if beginner-level courses are needed to fully benefit from the courses.

Graduation/Exit, Benchmark, and/or Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The Certificate of Advanced Graduate Study in Clinical Mental Health Counseling is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information

cmhc@rowan.edu

Certificates of Graduate Study (Non-degree)

Certificate of Graduate Study in Cannabinoid Chemistry (COGS)

The Certificate of Graduate Study in Cannabinoid Chemistry will prepare its students in the fundamental and underlying science necessary for the analysis of marijuana, cannabinoids, and related materials. Due to the increased nationwide trends toward legalization and prescription of medical marijuana, development of cannabis related therapies, and legalization of recreational marijuana (including in the State of NJ), there is a pressing need for scientists trained in the analysis of cannabinoid containing materials. This training would be useful to careers in health professions, food science, pharmaceuticals, and biotechnology.

Program Requirements

- Total semester hours required graduate work for program completion: 12 -13 Semester Hours (s. h.)

Required Courses 12 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
CHEM 09530	Advanced Chemical Analysis of Cannabinoids	3
CHEM 07590	General Aspects of Pharmacology	3
CHEM 07588	Advanced Natural Products Chemistry	3

Students select one (1) elective course:

Elective Courses		3-4 s.h.
(s.h.: semester hours/credit hours)		
Course #	**Course Title**	**S.H.**
CHEM 07564	Advanced Organic Synthesis	3
CHEM 07592	Advanced Pharmaceutical Chemistry	3
CHEM 07568	Medicinal Chemistry	3
CHEM 07570	Organic Spectroscopy	3
CHEM 07557	Chemical Biology	3
CHEM 09510	Instrumental Analysis	4
CHEM 09522	Advanced Bioanalytical Chemistry	3
Total Required Credits for the Program		**12-13 s.h.**

Foundation Courses

None

Graduation/Exit, Benchmark, and/or Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The Certificate of Graduate Study in Cannabinoid Chemistry is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
Kandalam Ramanujachary
Science Hall
856.256.5451
chemistry@rowan.edu

Certificate of Graduate Study in Computational Data Science (COGS)

The Certificate of Graduate Study (COGS) in Computational Data Science is intended for tech savvy industry managers who need to take advantage of big data opportunities. As a result of this program, students will be able to apply data analytics in any area of specialization. Students will be prepared to use algorithms, statistics, and technology to extract business intelligence from massive amounts of data, to manage streamed data or data stored in massive data warehouses and to visually analyze and present information.

Program Requirements

Required Courses		6 s.h.
(s.h.: semester hours/credit hours)		
Course #	**Course Title**	**S. H.**
DS 02510	Visual Analytics	3
CS 02505	Data Mining I	3
Elective Courses		6 s.h.
Choose 6 s.h.		
Course #	**Course Title**	**S.H.**
CS 02620	Data Warehousing	3
STAT 02515	Applied Multivariate Data Analysis	3
STAT 02514	Decision Analysis	3
CS 02605	Data Mining II	3
CS 02570	Information Visualization	3
CS 02530	Advanced Database Systems: Theory and Programming	3
CS 02630	Advanced Topics in Database Systems	3
CS 07556	Machine Learning I	3
CS 02625	Data Quality and Web/Text Mining	3
ECE 09555	Advanced Topics in Pattern Recognition	3
Total Required Credits		12 s.h.

Foundation Courses
None

Graduation/Exit, Benchmark, and Thesis Requirements
None

Minimum Required Grades and Cumulative GPA
The COGS in Computational Data Science is a Category 3 program.
For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
Anthony Breitzman
Robinson Hall, Room 328P
breitzman@rowan.edu

Certificate of Graduate Study in Cybersecurity Architecture (COGS)

The Certificate of Graduate Study (COGS) in Cybersecurity Architecture is designed to offer students the opportunity of a specialized study to provide students with experience in key courses of this discipline at the graduate level.

Program Requirements

Coursework

The Certificate of Graduate Study in Cybersecurity Architecture consists of 12 s.h. of coursework.

Students seeking this COGS will be required to take one (1) required course and three (3) restricted electives. The COGS is a stackable certificate, and students can apply their certificate credits toward the M.S. in Computer Science. Students may also apply some of their certificate credits toward the M.S. in Cybersecurity. Students should consult with the program advisor for additional information. All courses are three (3) semester hours.

Program Requirements

Required Courses 3 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S. H.
CS 03551	Advanced Cyber Security: Principles & Applications	3

Restricted Elective Courses 9 s.h.

Choose 9 s.h.

Course #	Course Title	S.H.
CS 03570	Cyber Defense of Operating Systems and Networks	3
CS 03580	Cloud Computing and the Internet of Things Architecture and Security	3
CS 07652	Cryptographic Algorithms	3
CS 09510	Computer Networks	3
CS 09612	Network Security	3
ECE 09585	Advanced Engineering Cyber Security	3

Total Required Credits for the Program 12 s.h.

Foundation Courses
None

Graduation/Exit, Benchmark, and/or Thesis Requirements
None

Minimum Required Grades and Cumulative GPA
The Certificate of Graduate Study in Cybersecurity Architecture is a Category 3 program.
For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
Vahid Heydari
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heydari@rowan.edu

Certificate of Graduate Study in Cybersecurity Principles (COGS)

The Certificate of Graduate Study (COGS) in Cybersecurity Principles is designed to prepare students with the knowledge and skills needed to understand key issues along with present and emerging cyber threats to information systems.

Students will be able to articulate the core concepts of cybersecurity, asset protection and cyber defense, learn specific techniques for vulnerability analysis and security risk assessment, and understand how to build a technical architecture which includes security considerations and analyze technical policies and processes.

Program Requirements

Coursework

Students seeking this COGS will be required to complete any four (4) of the following 3 s.h. courses. None of the courses have prerequisites.

Required Courses 12 s.h.

(s.h.: semester hours/credit hours)

Choose four (4) from the following options.

Course #	Course Title	S. H.
CS 03500	Foundations of Cybersecurity	3
CS 03506	Cybersecurity Management, Policy, and Risk	3
CS 03570	Cyber Defense of Operating Systems and Networks	3
CS 03580	Cloud Computing and the Internet of Things: Architectures and Security	3
CS 03551	Advanced Cybersecurity Principles and Applications	3

Total Required Credits 12 s.h.

Foundation Courses

Please contact program coordinator for additional details.

Graduation/Exit, Benchmark, and Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The COGS in Cybersecurity Principles is a Category 3 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information

Vahid Heydari
Robinson Hall, Room 328J
856.256.4500, ext.53548
heydari@rowan.edu

Certificate of Graduate Study in Health Data Management (COGS)

The Certificate of Graduate Study (COGS) in Health Data Management is designed to offer students the opportunity to understand how to handle health-related data and design and analyze experiments as they relate to health data. It is intended for researchers, statisticians, or data analysts who would like to play a part in the healthcare industry.

Students seeking this COGS will be required to take two (2) required courses and two (2) restricted electives. The COGS is a stackable certificate, and students can apply their certificate credits toward the M.S. in Data Science. Students may also apply some of their certificate credits toward the M.S. in Computer Science. Students should consult with the program advisor for additional information. All courses are three (3) semester hours.

Program Requirements

The Certificate of Graduate Study in Health Data Management consists of 12 s.h. of coursework

Coursework

The following courses are required to complete the COGS in Health Data Management

- **Required Courses:** 6 s.h.
- **Restricted Elective Courses:** 6 s.h.

Required Courses 6 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
DA 03510	Patient Data Understanding	3
CS 02625	Data Quality and Web/Text Mining	3

Restricted Elective Courses 6 s.h.

Choose 6 s.h. from the following options.

Course #	Course Title	S.H.
DA 03511	Patient Data Privacy & Ethics	3
DA 03520	Healthcare Management	3
STAT 02525	Design and Analysis of Experiments	3

Total Required Credits for the Program 12 s.h.

Foundation Courses

A sufficient computing and mathematics background evidenced by courses in Statistics, Linear Algebra, Object-Oriented Programming, and Data Structures and Algorithms.

Graduation/Exit, Benchmark, and/or Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The Certificate of Graduate Study in Health Data Management is a Category 3 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
Anthony Breitzman
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breitzman@rowan.edu

Certificate of Graduate Study in Industrial Chemistry (COGS)

This certificate is intended for the students with a background in Chemistry, Biochemistry, Biological Sciences, and/or Chemical Engineering who wish to understand chemical industry procedures and practices generally employed in pharmaceutical drug development. Prospective students may be recent graduates of a bachelor's degree program, or they may be older professionals seeking to update their skills. The certificate may be earned on its own, or it can be credited towards the Master of Science in Pharmaceutical Sciences.

Program Requirements

Core Courses 9 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
CHEM 07592	Advanced Pharmaceutical Chemistry	3
CHEM 07593	Regulatory Affairs	3
CHEM 07594	GLP/GMP Techniques	3

Elective Courses (any of the following) 3-4 s.h.

Choose 3-4 s.h.

Course #	Course Title	S.H.
CHEM 05530	Special Topics in Chemistry	3
CHEM 07570	Organic Spectroscopy	3
CHEM 09510	Instrumental Analysis	4
CHEM 09520	Advanced Bioanalytical Chemistry	3

Total Required Credits for the Program 12-13 s.h.

Foundation Courses

Required: Two semesters of General Chemistry, Two semesters of Organic Chemistry

Recommended: Analytical Chemistry/Quantitative Analysis and Biochemistry

Graduation/Exit, Benchmark, and/or Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The Certificate of Graduate Study in Industrial Chemistry is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information

Kandalam Ramanujachary
Science Hall
856.256.5451
chemistry@rowan.edu

Certificate of Graduate Study in Networks (COGS)

The Certificate of Graduate Study (COGS) in Networks is designed to offer students the opportunity of a specialized study to provide students with experience in key courses of this discipline at the graduate level.

Program Requirements

Coursework

Students seeking this COGS will be required to take one (1) required course and three (3) restricted electives. The COGS is a stackable certificate, and students can apply their certificate credits toward the M.S. in Computer Science. Students may also apply some of their certificate credits toward the M.S. in Cybersecurity. Students should consult with the program advisor for additional information. All courses are three (3) semester hours.

Required Courses 3 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
CS 09510	Computer Networks	3

Restricted Elective Courses 9 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
CS 03580	Cloud Computing and the Internet of Things - Architectures and Security	3
CS 09605	Wireless Networks & Systems	3
CS 09612	Network Security	3
CS 09675	Advanced TCP/IP & Internet Protocols & Technologies	3

Total Required Credits for the Program 12 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and/or Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The Certificate of Graduate Study in Networks is a Category 3 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information

Shen-Shyang Ho
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856.256.4805
hos@rowan.edu

Certificate of Graduate Study in Research and Leadership in Applied Behavior Analysis (COGS)

The Certificate of Graduate Study (COGS) in Research and Leadership in Applied Behavior Analysis, which is a sequence of four (4) courses comprising 12 credits, is designed to be taken in conjunction with the MA in ABA at Rowan University (or a similar program outside of Rowan). Students enrolled in the COGs will get experience conducting cutting edge research under the mentorship of faculty in the Applied Behavior Analysis program of the Psychology Department. They will gain hands on experience conceptualizing the research process, completing regulatory procedures needed to conduct research, developing research materials, interacting with research participants, analyzing data, writing research results (with the potential for publishing in peer-reviewed journals), and presenting those results at local, regional, or national conferences. This experience will be beneficial to any student who wishes to continue their education in a Ph.D. program, or who wants more in-depth research experience for the benefit their applied practice. In addition to these research skills, students in the COGs will complete leadership coursework related to performance management, which will be beneficial to those who aspire for higher level supervisory roles.

Students taking the COGS coursework must have already completed, or currently be matriculated in, the Master of Arts in Applied Behavior Analysis at Rowan University (or a comparable program at a different institution).

Program Requirements

Required Courses 12 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
PSY 01550*	Clinical Research Practicum	3
PSY 02660*	Research Project in ABA I	3
PSY 02662*	Research Project in ABA II	3
PSY 02672*	Performance Management	3

* Prerequisites: PSY 01500, PSY 01510, and Matriculation into COGS in Research and Leadership in ABA

Total Required Credits for the Program 12 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and/or Thesis Requirements

Successful completion of all coursework with no more than two grades below B-.

Minimum Required Grades and Cumulative GPA

The Certificate of Graduate Study in Research and Leadership in Applied Behavior Analysis is a Category 1 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
Michelle Ennis Soreth, Ph.D., BCBA-D
Robinson Hall
abacoursework@rowan.edu

Certificate of Graduate Study in Software Engineering (COGS)

The Certificate of Graduate Study (COGS) in Software Engineering is designed to offer students the opportunity of a specialized study to provide students with experience in key courses of this discipline at the graduate level.

Program Requirements

The Certificate of Graduate Study in Software Engineering consists of 12 s.h. of coursework.

Coursework

Students seeking this COGS will be required to take one (1) required course and three (3) restricted electives. The COGS is a stackable certificate, and students can apply their certificate credits toward the M.S. in Computer Science. All courses are three (3) semester hours.

Required Courses 3 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
CS 04524	Agile Software Engineering	3

Restricted Electives 9 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
CS 02530	Advanced Database Systems: Theory and Programming	3
CS 02630	Advanced Topics in Database Systems	3
CS 04515	Embedded Systems Programming	3
CS 04548	Programming Languages: Theory, Implementation & Application	3
CS 04563	Concurrent Programming - Theory and Practice	3
CS 04670	Advanced Object-Oriented Design	3
CS 04623	Advanced Software Engineering	3

Total Required Credits for the Program 12 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and/or Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The Certificate of Graduate Study in Software Engineering is a Category 3 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information

Jack Myers
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Post-Baccalaureate Programs (Non-degree)

Post-Baccalaureate Certificate in Applied Behavior Analysis

Applied Behavior Analysis (ABA) involves the use of well-established and empirically supported principles to address behavioral concerns and facilitate skill acquisition. ABA has been empirically shown to be effective in a wide variety of areas, and has received the most recognition for its success in designing and providing behavioral support for individuals with autism spectrum disorder (ASD) and other developmental disabilities

The Post-Baccalaureate Certificate Program is designed to provide students with the necessary coursework required to apply for certification as a Board Certified Assistant Behavior Analyst (BCaBA). In addition to coursework, the BCaBA certification requires a bachelor's degree from an accredited university, and additional hours of supervised practice. For more information please see Behavior Analyst Board Certification, Inc. standards at www.bacb.com.

A note about BCaBA Certification

While the Association for Behavior Analysis International (ABAI) has approved the courses in the Post-Baccalaureate in Applied Behavior Analysis as meeting the coursework requirements for the Board Certified Assistant Behavior Analyst (BCaBA) certification, applicants will have to meet additional requirements to qualify for the BCaBA certification including:

- a Bachelor's degree from an accredited university
- additional hours of supervised fieldwork
- The Behavior Analyst Certification Board has ultimate responsibility for determining eligibility for certification as a BCaBA. For more information please see Behavior Analyst Board Certification, Inc. standards at www.bacb.com.

Program Requirements

Required Courses 18 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
PSY 02310	Learning & Behavior	3

PSY 02325	Functional Behavioral Assessment	3
PSY 02320	Single Subject Research Methodology	3
PSY 02305	Applied Behavior Analysis	3
PSY 01424	Professional Issues in Applied Behavior Analysis	3
PSY 01425	Fieldwork in Applied Behavior Analysis	3
Total Required Credits for the Program		18 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and/or Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The Post-Baccalaureate in Applied Behavior Analysis is a Category 1 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
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Post-Baccalaureate Certificate in Pre-Health Studies

The Pre-Health Studies Post-Baccalaureate is designed for individuals who are interested in a career in the health professions but have little or no background in science. The coursework focuses on the foundational prerequisites required of health profession schools including medical and dental school. The curriculum is paired with support programming from the Office of Pre-Health, discounted admission exam preparation course options, and application support including a University Committee Letter. The program is tailored to each individual student based on their health-related professional goals.

Upon completion of the Post-Baccalaureate Certificate in Pre-Health Studies, students will demonstrate knowledge of scientific foundations, including fundamentals of chemistry, biology, and physics, needed to succeed on the admissions test and the future health professional curriculum. Available targeted health profession routes include but are not limited to medical, dental, optometry, physician assistant, and physical therapy.

For students seeking Grade Enhancer programs, we encourage you to explore the CMSRU post-baccalaureate Advanced PreMedical Studies certificate or the Rowan Graduate School of Biomedical Sciences' programs: graduate certificate or Master's in Biomedical Studies.

The Pre-Health Studies Post-Baccalaureate is a full-time 13-month program offered in face-to-face format. It requires the completion of 32 semester hours, consisting of 4 required courses (16 semester hours) and a minimum of 16 semester hours from our elective course options. The number and type of elective courses chosen varies and depends on the targeted health profession. You will work with the program director to determine the best elective options for your career goals.

Program Requirements

The program consists of four (4) required courses (those required by all known health professions programs), totaling 16 credits. These courses are marked required below. In addition to the core courses, additional electives would be required depending on which health profession is targeted and in consultation with the program director. The total number of credits for the program is 32 credits.

Required Courses 16 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
CHEM 06100	Chemistry I **(required)**	4
CHEM 06101	Chemistry II **(required)**	4
MCB 01101	Foundations in Biology for Biomedical Sciences I (FBBS1) **(required)**	4
MCB 01102	Foundations in Biology for Biomedical Sciences II (FBBS2) **(required)**	4

Elective Courses 16 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
PHYS 00210	Physics I	4

PHYS 00211	Physics II	4
CHEM 07200	Organic Chemistry I	4
CHEM 07201	Organic Chemistry II	4
BIOL 10210	Human Anatomy and Physiology I	4
BIOL 10212	Human Anatomy and Physiology II	4
BIOL 14440	Introduction to Biochemistry	3
CHEM 07348	Biochemistry	4
BIOL 11330	Microbiology	4
BIOL 22335	Genetics	4
BIOL 22410	Concepts in Human Genetics	4
MCB 22450	Molecular Genetics	4
STAT 02260	Statistics I	3
STAT 02280	Biometry	4
PSY 01108	Essentials of Psychology for Pre-Health Students	3
MATH 01122	Pre-Calculus	4
MATH 01130	Calculus I	4
MATH 01131	Calculus II	4
SOC 08120	Introduction to Sociology	3
Total Required Credits for the Program		32 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and/or Thesis Requirements

Completion of the required courses in the selected professional area bank with a 3.0 GPA and approval of completion by the program advisor. Students are required to fulfill a minimum of 32 credits in the program.

Minimum Required Grades and Cumulative GPA

The Post-Baccalaureate in Pre-Health Studies is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Director Contact Information
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Virtua Health School of Nursing & Health Professions

Peter Rattigan
Dean
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Jennifer Ravelli
Assistant Dean
ravelli@rowan.edu

About the School

The Virtua Health School of Nursing & Health Professions provides rigorous academic training, exceptional clinical and internship experiences, and interprofessional opportunities for students interested in careers in nursing and health-related fields. Our students learn from an accomplished faculty in a collaborative environment and gain hands-on training both on and off campus.

Departments

The Virtua Health School of Nursing & Health Professions consists of three departments: Allied Health, Health & Exercise Science, and Nursing. The Department of Health & Exercise Science offers master's degrees in Athletic Training, Wellness & Lifestyle Management, and Nutrition & Dietetics. The Department of Nursing offers an RN-BSN degree at the undergraduate level and MSN degrees in Nurse Educator, Nurse Executive and a variety of Nurse Practitioner specialties at the graduate level.

Programs Offered

All programs offered are listed below in order of degree/program type and then in alphabetical order by program name. Details about each program are then listed within the catalog in the same order. For the most up-to-date information regarding mode of delivery options for your program of interest, please visit https://global.rowan.edu/programs/index.html.

MASTER'S DEGREES

Program Name	Format/Location	Program/Major Codes	Avail FT/PT	Total Credits
Master of Arts in Wellness & Lifestyle Management	100% online	MA-WLM/G837	Part-time	30
Master of Science in Athletic Training	Traditional	MS-AT/G328	Full-time	68 (for incoming freshman students
Master of Science in Nutrition & Dietetics	Traditional	MS-NUTDIET/G839	Full-time	30
Master of Science in Nursing	Hybrid	MSN-NURS/G265	Part-time	36-53
		Concentration Name/Code		
		Nurs Pract - Family/C264		
		Nurs Pract - AGACNP/C260		
		Nurs Pract - Psych Mental Health/C021		
		Nurse Educator/C266		
		Nurse Executive/C270		

CERTIFICATES OF ADVANCED GRADUATE STUDY / CAGS (NON-DEGREE)

Program Name	Format/Location	Program/Major Codes	Avail FT/PT	Total Credits
Certificate of Advanced Graduate Study in Adult Gerontology Acute Care Nurse Practitioner	Hybrid	CAG-AGACNP/G267	Both	22
Certificate of Advanced Graduate Study in Family Nurse Practitioner	Hybrid	CAG-FAMNP/G266	Both	22
Certificate of Advanced Graduate Study in Psychiatric Mental Health Nurse Practitioner	Hybrid	CAG-PSYNUR/G268	Both	31

CERTIFICATES OF GRADUATE STUDY / COGS (NON-DEGREE)

Program Name	Format/Location	Program/Major Codes	Avail FT/PT	Total Credits
Certificate of Graduate Study in Wellness Coaching	Online	COG-WELLCOAC/G927	Both	12

Admissions

For the most up-to-date information regarding admission requirements, entry points, and application deadlines, please visit https://global.rowan.edu/programs/index.html. Click on your program of interest to be connected to program and admission details.

Academic Program Policy Categories

For the purposes of both the Minimum Satisfactory Academic Progress policy and the Minimum Graduation Requirements policy, post-baccalaureate/graduate academic programs at Rowan University fall into one of three major categories which are identified by their grade requirements as outlined below. (See individual program descriptions for academic categories.)

Category 1: To maintain Minimum Satisfactory Academic Progress in and to successfully graduate from a Category 1 program students must:

- Earn no more than two total "B-" grades
- Earn no grades lower than a "B-"
- Earn an official cumulative GPA (according to matriculation level) of at least 3.000 on Rowan's 4.000 scale

Category 2: To maintain Minimum Satisfactory Academic Progress in and to successfully graduate from a Category 2 program students must:

- Earn no grades lower than a "B-"
- Earn an official cumulative GPA (according to matriculation level) of at least 3.000 on Rowan's 4.000 scale

Category 3: To maintain Minimum Satisfactory Academic Progress in and to successfully graduate from a Category 3 program students must:

- Earn no more than two total C grades of any combination of "C+" or "C." (C- grades are not acceptable.)
- Earn no grades lower than a "C"
- Earn an official cumulative GPA (according to matriculation level) of at least 3.000 on Rowan's 4.000 scale

Policy Prior to Fall 2013 Matriculation

The academic review and minimum graduation requirements review policies will be applied to Rowan graduate and post-baccalaureate students who matriculate beginning Fall 2013 or later; however, current students (those matriculated and active before Fall 2013) will be grandfathered under the prior policy/practice, whose grade and GPA requirements are the same as Academic Review Category 3.

Master's Degrees

Master of Arts in Wellness & Lifestyle Management (M.A.)

The Master of Arts in Wellness & Lifestyle Management (WLM) is a program for professionals from a variety of disciplines who want to work with clients or students to create and maintain lifestyle changes. The program is designed to serve the needs of professionals from a variety of educational backgrounds. The goal of this program is to prepare professionals in corporate, hospital and community health promotion settings to facilitate and lead wellness initiatives within their organizations. Graduates will be prepared to serve as facilitators, coordinators and managers of wellness programs in the following types of organizations:

- Corporate wellness/fitness facilities
- Hospital-based wellness/fitness facilities
- Clinical and rehabilitation centers
- Schools and Colleges/universities
- Community wellness/fitness facilities
- Non-profit health agencies
- State/county/city Departments of Public Health

The Master of Arts in Wellness & Lifestyle Management program consists of 10 courses and a total of 30 graduate semester hours (s.h.). This is a part-time accelerated program with degree completion possible in 5 consecutive semesters.

Program Requirements

Required Courses 30 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
WLM 00512	Understanding and Applying the Professional Literature in HES	3
WLM 00530	Leadership and Management in Health Promotion Programs	3
WLM 00541	Wellness Coaching and Behavior Change	3
WLM 00542	Program Planning in Health Promotion	3
WLM 00580	Obesity and Diabetes Prevention and Management	3
WLM 00590	Integrating Wellness into School Settings	3
WLM 00600	Promoting Human Wellness Across the Lifespan	3
WLM 00610	Positive Perceptions & Performance Wellness	3
WLM 00575	Wellness in the Workplace	3
HLT 00550	Capstone Project	3
or WLM 00620	Internship in Wellness and Lifestyle Management	
or WLM 00621	Practicum in Wellness Coaching	

Total Required Credits for the Program 30 s.h.

Foundation Courses

Students must have completed a three (3) credit undergraduate-level Basic Nutrition (NUT 00200) course and a four (4) credit Anatomy and Physiology (BIOL 10210 or 10212) course at an accredited institution before beginning the WLM 00580: Obesity and Diabetes Prevention and Management course.

Graduation/Exit, Benchmark, and/or Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The Master of Arts in Wellness & Lifestyle Management is a Category 3 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator & Academic Advisor
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Master of Science in Athletic Training (M.S.)

The Athletic Training Program at Rowan University is a rigorous and intense program designed to prepare students to take the Board of Certification, Inc., Exam and to become competent Athletic trainers. A major objective of this program is to prepare graduates to enter a variety of employment settings and to render care to a wide spectrum of individuals engaged in physical activity. The technical standards set forth by the Athletic Training Program establish the essential qualities considered necessary for students admitted to this program to achieve the knowledge, skills, and abilities of an entry-level certified athletic trainer, as well as meet the expectations for the Commission on Accreditation of Athletic Training Education [CAATE].

Current Rowan University Students

The MSAT is essentially a 3+2 Master's program. Students accepted to Rowan University will declare their major within the undergraduate Pre-Athletic Training (PreAT) curriculum. The PreAT curriculum is designed to prepare students for the Professional Preparation (Graduate) curriculum over a 3 year sequence of courses. In the spring of the junior year, students will apply to the Professional Preparation component. **Please see the Undergraduate Catalog under BS in Athletic Training Studies for a description of how the PreAT and the BS in Athletic Training Studies are implemented**. Once accepted into the Professional Athletic Training Program, students will begin the curriculum in May of their third year and continue for two calendar years.

The MSAT will begin accepting non-Rowan students in the Spring 2023 cycle. These students will complete the two-year program starting in May of the year they are accepted.

The MSAT has four (4) total clinical experience classes with two (2) being completely immersive. This means students will spend the majority or all of a semester in the clinical setting without attending face-to-face classes.

Program Requirements

Required Courses 68 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
ATR 00510	Cadaver Anatomy	4
ATR 00511	Management of Medical Emergencies	3
ATR 00519	Clinical Assessment I	4
ATR 00524	Injury Risk Management to Enhance Human Performance	3
ATR 00505	Principles in Evidence-based Practice	3
ATR 00520	Clinical Assessment II	4
ATR 00521	Clinical Assessment III	4
ATR 00531	Therapeutic Interventions I	4
ATR 00533	Therapeutic Interventions II	4
ATR 00526	Healthcare Management & Quality Improvement	3
ATR 00530	Pharmacology	3
ATR 00535	Behavioral Health	3
ATR 00537	Residency in Athletic Training I	3
ATR 00538	Residency in Athletic Training II	3
ATR 00540	Fellowship in Athletic Training I	5
ATR 00541	Fellowship in Athletic Training II	5
ATR 00560	Capstone in Clinical Reasoning I	4
ATR 00561	Capstone in Clinical Reasoning II	4
ATR 00570	Seminar in Healthcare Inter-professional Education & Practice	2

Please follow Rowan University transfer policy when applying for acceptance to Rowan University. Once accepted into Rowan University, the Athletic Training Program has an additional transfer policy. Please refer to the following: Athletic Training Program's Transfer Policy.

Total Required Credits for the Program 68 s.h.

Foundation Courses

Please see Pre-Athletic Training Curriculum.

Graduation/Exit, Benchmark, and Thesis Requirements

Students will be required to complete a graduate student research project prior to graduation.

Minimum Required Grades and Cumulative GPA

The Master of Science in Athletic Training is a Category 3 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
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Master of Science in Nutrition and Dietetics (M.S.)

The M.S. in Nutrition and Dietetics prepares graduates to earn the Registered Dietitian credential and provide nutrition education and consultation, evaluate patients/clients and provide dietary assessments and recommendations in hospital, education and community settings.

The M.S. in Nutrition and Dietetics is a full-time program offered in a hybrid format with courses taking place at the Glassboro, NJ campus. It requires the completion of 30 graduate semester hours (8 courses). The Supervised Practice (internship) may be completed at any facility in the United States or abroad that is approved by the nutrition and dietetics accrediting body, ACEND. The M.S. program is designed to prepare graduates to earn the Registered Dietitian credential.

Program Requirements

Required Courses 30 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
NUT 00518	Nutrition and Epidemiology	3
NUT 00520	Supervised Practice	6
NUT 00530	Medical Nutrition Therapy Supervised Practice	6
WLM 00530	Leadership and Management in Health Promotion Programs	3
WLM 00541	Wellness Coaching and Behavior Change	3
NUT 00500	Advanced Nutritional Assessment	3
NUT 00511	Advanced Nutrition Therapy	3
NUT00540	Metabolic Basis of Disease	3

Total Required Credits for the Program 30 s.h.

Foundation Courses

See above

Graduation/Exit, Benchmark, and/or Thesis Requirements

- 1200 supervised practice hours
- All ACEND competencies fulfilled

Minimum Required Grades and Cumulative GPA

The Master of Science in Nutrition and Dietetics is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
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Master of Science in Nursing (M.S.N.)

The Master of Science in Nursing (M.S.N.) program at Rowan University was established to provide Registered Nurses in the greater Philadelphia/tri-state area with the skills to assume leadership roles in their respective organizations.

Concentrations

The Master of Science in Nursing program requires students to select a concentration. Each has different course requirements which are outlined below. **All students must successfully complete the Master of Science in Nursing core maintain a GPA of 3.00 prior to being approved by the department to continue on to their concentration. The Master of Science in Nursing is a Category 2 program requiring a minimum of B- in all courses.**

- **Nurse Educator:** The Master of Science: Nurse Educator concentration will supply Educators with the essentials to address many of today's pressing needs in the healthcare arena. This MSN concentration will provide Graduate Nurses with a firm foundation of teaching/learning principles, curriculum design, and evaluation methods. As a Nurse Educator, you can remain at the bedside, become a staff educator, develop into a leader in your chosen area of expertise, and/or teach nursing to future Nurses.
- **Nurse Executive:** The Master of Science: Nurse Executive concentration will prepare the current and future nursing leaders with the education to help them understand and respond to organizational dynamics of the current environment. Application of evidence-based best practice models to guide actions will be the key to accentuate success and result in sustainable change that is valued by organizations and all key stakeholders in health care in the 21st Century.
- **Nurse Practitioner-Adult Gerontology Acute Care:** The Nurse Practitioner program prepares Registered Nurses (RN) to sit for the concentration certification exam. The certifying agency determines eligibility for the exam.
- **Nurse Practitioner-Family:** The Nurse Practitioner program prepares Registered Nurses (RN) to sit for the specialty certification exam. The certifying agency determines eligibility for the exam.
- **Psychiatric Mental Health Nurse Practitioner:** The Nurse Practitioner program prepares Registered Nurses (RN) to sit for the concentration certification exam. The certifying agency determines eligibility for the exam.

Abbreviations

- NP - Nurse Practitioner
- FNP - Family Nurse Practitioner
- AGACNP - Adult Gerontology Acute Care Nurse Practitioner
- PMHNP - Psychiatric Mental Health Nurse Practitioner

Program Requirements

Required Core MSN Courses 22 s.h.

(s.h.: semester hours/credit hours)

All applicants to the Master of Science in Nursing program who meet the admission requirements are first admitted to the Master of Science in Nursing CORE which consists of seven graduate level courses taken by all MSN students regardless of their specialty track. Students must maintain a cumulative GPA of 3.0 in all MSN CORE courses in order to apply and be approved by the Department of Nursing to apply to a concentration. Admission to the concentration will only occur after core completion and faculty review/approval.

Course #	Course Title	S.H.
NURS 05500	Integrated Information Technology and Healthcare	3
NURS 05501	Advanced Health Assessment	3
NURS 05503	Advanced Nursing Research	4
NURS 05504	Advanced Pathophysiology	3
NURS 05505	Advanced Pharmacology	3
NURS 05507	Leadership and Care Delivery Environment	3
NURS 05508	Special Issues and Trends in Nursing	3
Total Core MSN Credits		22 s.h.

Core Nurse Executive Courses

Course #	Course Title	S.H.
NURS 05550	Integrated Information Technology and Healthcare	3
NURS 05503	Advanced Nursing Research	4
NURS 05507	Leadership and Care Delivery Environment	3
NURS 05508	Special Issues and Trends	3
NURS 05510	Evidence Based Practice in Illness and Disease	3
Total Core Nurse Executive Credits		16 s.h.

Core Nurse Practitioner Courses
(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
NURS 05516	Epidemiology Health Promotion & Disease Management	2
NURS 05517	Nurse Practitioner Role: History, Practice Regulation, Reimbursement, and Ethics	2
Total Core Nurse Practitioner Credits		4 s.h.

Required Concentration Courses

Students select one concentration area from the options below.

Adult Gerontology Acute Care NP Concentration Courses

Course #	Course Title	S.H.
NURS 05538	Adult Acute and Chronic Disease Management	3
NURS 05533	AGACNP Adult Medicine Clinical I (200 hours)	3
NURS 05534	Evidence Based Clinical Care for AGACNP I	3
NURS 05535	AGACNP Adult Medicine Clinical II (200 hours)	3
NURS 05536	Evidence-based Clinical Care for AGACNP II	3
NURS 05537	AGACNP Adult Medicine Clinical III (200 hours)	3
Total Adult Gerontology Acute Care NP Concentration Credits		18 s.h.
Total Required Credits for the Program		44 s.h.

Family NP Concentration Courses

Course #	Course Title	S.H.
NURS 05538	Adult Acute and Chronic Disease Management	3
NURS 05545	FNP Clinical I (200 hours)	3
NURS 05546	Women's Health Pediatrics	3
NURS 05544	Women's Health Pediatrics Clinical (200 hours)	3
NURS 05532	Across the Lifespan Primary Care	3
NURS 05547	FNP Clinical II (200 hours)	3
Total Family NP Concentration Credits		18 s.h.
Total Required Credits for the Program		44 s.h.

Core Nurse Practitioner Courses for the Psychiatric Mental Health Concentration
(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
NURS 05551	Theoretical Foundations of Psychotherapy Across the Life Span	3
NURS 05553	Principles of Psychopharmacology Across the Lifespan	3
NURS 05552	Biopsychosocial Assessment and Differential Diagnosis	3

Psychiatric Mental Health NP Concentration Courses

Course #	Course Title	S.H.
NURS 05554	Behavior Theory I: Care of the Adult and the Older Adult and Family	3
NURS 05555	Behavior Clinical Practicum I: Care of the Adult and the Older Adult and Family (200 hours)	3
NURS 05556	Behavior Theory II: Care of the Adult and the Older Adult and Family	3
NURS 05557	Behavior Clinical Practicum II: Care of the Adult and the Older Adult and Family (200 hours)	3
NURS 05558	Behavior Theory III: Care of the Child and Adolescent and Family	3
NURS 05559	Behavior Clinical Practicum III: Care of the Child and Adolescent and Family (200 hours)	3
Total Psychiatric Mental Health NP Concentration Credits		27 s.h.
Total Required Credits for the Program		53 s.h.

Nurse Educator Concentration Courses

Course #	Course Title	S.H.
NURS 05502	Teaching and Learning in Nursing	3
NURS 05506	Learning Assessment in the Classroom and Clinical Environment	3
NURS 05513	Nursing Curricular Design and Evaluation	3
NURS 05514	Nurse Educator: Leadership, Quality, and Planned Change in the Practice Environment I (100 hours)	3

NURS 05515	Nurse Educator: Leadership, Quality, and Planned Change in the Practice Environment II (200 Clinical Hours)	4
Total Nurse Educator Concentration Credits		16 s.h.
Total Required Credits for the Program		38 s.h.

Nurse Executive Concentration Courses

Course #	Course Title	S.H.
NURS 05561	The Role of the Nurse Executive - Theory and Practice	3
NURS 05560	Evidence Based Practice in Illness/Disease	3
NURS 055XX	Healthcare Organizational Structure	3
NURS 055XX	Philosophy and Ethics in Advanced Nursing Roles	3
NURS 055XX	Healthcare Economics	4
NURS 055XX	Nurse Executive and Human Capital Issues	3
NURS 055XX	Nurse Executive Administration Practicum (150 Clinical Hours)	4
Total Nurse Executive Concentration Credits		23 s.h.
Total Required Credits for the Program		39 s.h.

Total Required Credits for the MSN Program 39-53 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and/or Thesis Requirements

- 300 - 600 Clinical Hours per Concentration
- EBI Exit Survey
- GPA of 3.0 or higher

Minimum Required Grades and Cumulative GPA

The Master of Science in Nursing is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Advisor Contact Information
Dr. Mary Ellen Santucci
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Dr. Matthew Kaspar (FNP Concentration Advisor)
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Dr. Carmen McDonald (Nurse Executive Concentration Advisor)
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Dr. Melissa Mordecai (AGACNP Concentration Advisor)
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Dr. Robert White (PMHNP Concentration Advisor)
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Certificates of Advanced Graduate Study (CAGS)

Certificate of Advanced Graduate Study in Adult Gerontology Acute Care Nurse Practitioner (CAGS)

The Certificate of Advanced Graduate Study in Adult Gerontology Acute Care Nurse Practitioner is designed to allow a registered nurse with at least a Master's of Science in Nursing (MSN) to obtain a nurse practitioner certification by completing the required coursework to prepare for the certification exam.

Program Requirements

Required Courses 22 s.h.

(s.h.: semester hours/credit hours)

Nurse Practitioner Core Courses 4 s.h.

Course #	Course Title	S.H.
NURS 05516	Epidemiology Health Promotion & Disease Management	2
NURS 05517	Nurse Practitioner Role: History, Practice Regulations, Reimbursement and Ethics	2

MSN Core Courses 18 s.h.

Course #	Course Title	S.H.
NURS 05538	Adult Acute and Chronic Disease Management*	3
NURS 05533	AGACNP Adult Medicine Clinical I	3
NURS 05534	Evidence Based Clinical for Adult Gerontology Acute Care Nurse Practitioner I	3
NURS 05535	AGACNP Adult Medicine Clinical II	3
NURS 05536	Evidence Based Clinical for Adult Gerontology Acute Care Nurse Practitioner II	3
NURS 05537	AGACNP Adult Medical Clinical III	3

Total Required Credits for the Program 22 s.h.

Foundation Courses

A GAP analysis will be performed on every applicant's MSN transcript. The coordinator of the particular concentration will determine which CORE courses are needed prior to entering the concentration.

Graduation/Exit, Benchmark, and/or Thesis Requirements

Exit Survey is required.

Minimum Required Grades and Cumulative GPA

The Certificate of Advanced Graduate Study in Adult Gerontology Acute Care Nurse Practitioner is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
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856.256.5176
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Certificate of Advanced Graduate Study in Family Nurse Practitioner (CAGS)

The Certificate of Advanced Graduate Study in Family Nurse Practitioner is designed to allow a registered nurse with at least a Master's of Science in Nursing (MSN) to obtain a nurse practitioner certification by completing the required coursework to prepare for the certification exam.

Program Requirements

Required Courses 22 s.h.

(s.h.: semester hours/credit hours)

Nurse Practitioner Core Courses 4 s.h.

Course #	Course Title	S.H.
NURS 05516	Epidemiology Health Promotion & Disease Management	2

NURS 05517	Nurse Practitioner Role: History, Practice Regulations, Reimbursement and Ethics	2

MSN Core Courses		18 s.h.
Course #	**Course Title**	**S.H.**
NURS 05538	Adult Acute and Chronic Disease Management*	3
NURS 05532	Across the Life Span Primary Care	3
NURS 05544	FNP Women's Health/Pediatric Clinical	3
NURS 05545	FNP Clinical I	3
NURS 05546	Women's Health and Pediatrics	3
NURS 05547	FNP Clinical II	3
Total Required Credits for the Program		22 s.h.

Foundation Courses

A GAP analysis will be performed on every applicant's MSN transcript. The coordinator of the particular concentration will determine which CORE courses are needed prior to entering the concentration.

Graduation/Exit, Benchmark, and/or Thesis Requirements

Exit Survey is required.

Minimum Required Grades and Cumulative GPA

The Certificate of Advanced Graduate Study in Family Nurse Practitioner is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
Matthew Kaspar, DNP, RN, Med, MSN, APN, FNP-C
Enterprise Center, Room 335
856.256.5127
kaspar@rowan.edu

Certificate of Advanced Graduate Study in Psychiatric Mental Health Nurse Practitioner (CAGS)

The Certificate of Advanced Graduate Study in Psychiatric Mental Health Nurse Practitioner is designed to allow a registered nurse with at least a Master's of Science in Nursing (MSN) to obtain a nurse practitioner certification by completing the required coursework to prepare for the certification exam.

Program Requirements

Required Courses 31 s.h.

(s.h.: semester hours/credit hours)

Nurse Practitioner Core Courses		4 s.h.
Course #	**Course Title**	**S.H.**
NURS 05516	Epidemiology Health Promotion & Disease Management	2
NURS 05517	Nurse Practitioner Role: History, Practice Regulations, Reimbursement and Ethics	2

MSN Core Courses		27 s.h.
Course #	**Course Title**	**S.H.**
NURS 05551	Theoretical Foundations of Psychotherapy Across the Life Span	3
NURS 05552	Biopsychosocial Assessment and Differential Diagnosis	3
NURS 05553	Principles of Psychopharmacology Across the Life Span	3
NURS 05554	Behavior Theory I: Care of the Adult and the Older Adult and Family	3
NURS 05555	Behavior Clinical Practicum I: Care of the Adult and the Older Adult and Family	3
NURS 05556	Behavior Theory II: Care of the Adult and the Older Adult and Family	3
NURS 05557	Behavior Theory III: Care of the Adult and the Older Adult and Family	3
NURS 05558	Behavior Theory III: Care of the Child and Adolescent and Family	3
NURS 05559	Behavior Clinical Practicum III: Care of the Child and Adolescent and Family	3
Total Required Credits for the Program		31 s.h.

Foundation Courses

A GAP analysis will be performed on every applicant's MSN transcript. The coordinator of the particular concentration will determine which CORE courses are needed prior to entering the concentration.

Graduation/Exit, Benchmark, and/or Thesis Requirements

Exit Survey is required.

Minimum Required Grades and Cumulative GPA

The Certificate of Advanced Graduate Study in Psychiatric Mental Health Nurse Practitioner is a Category 2 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
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Enterprise Center, Third Floor
856.256.5136
whiters@rowan.edu

Certificates of Graduate Study (COGS)

Certificate of Graduate Study in Wellness Coaching (COGS)

This certificate is designed for professionals from a variety of backgrounds who desire to pursue a national certification in wellness coaching and to work as wellness coaches. This program is approved by the National Board of Health and Wellness Coaching (NBHWC). Graduates of the program will be prepared to sit for the NBHWC or other wellness coaching certification exam. The certificate may be earned on its own, or it can be credited towards the Master of Arts in Wellness and Lifestyle Management.

Program Requirements

Required Courses 12 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
WLM 00541	Wellness Coaching and Behavior Change	3
WLM 00600	Promoting Human Wellness Across the Lifespan	3
WLM 00580	Obesity and Diabetes Prevention and Management	3
WLM 00621	Practicum in Wellness Coaching	3
Total Required Credits for the Program		12 s.h.

Foundation Courses

Any three (3) credit undergraduate nutrition course and any four (4) credit Anatomy and Physiology course from an accredited institution. NUT 00200 and BIOL 10210 or 10212 are recommended.

Graduation/Exit, Benchmark, and/or Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The Certificate of Graduate Study in Wellness Coaching is a Category 3 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
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Herman D. James Hall
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School of Earth & Environment

Kenneth J. Lacovara
Dean of School of Earth and Environment
Professor of Paleontology & Geology
Director, Jean and Ric Edelman Fossil Park
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Mission

The School of Earth & Environment is dedicated to seeking solutions to the world's most pressing environmental problems while providing opportunities for our students to become part of the solution and advance their careers in growing fields. The School is dedicated to disseminating information about our planet through teaching and publishing while catalyzing change towards a more sustainable future.

The school is organized around key topics:

- The Climate Crisis
- The Biodiversity Crisis
- The challenges of urbanization & regenerative growth
- Big Picture perspective—using both deep time and deep space to contextualize our present and inform our choices

About the School

There is a great need for qualified professionals to address the most dramatic global challenges, including environmental sustainability, energy, and climate change. Students graduating from the School enjoy unparalleled opportunities to integrate classroom learning with hands-on experiences and will be superbly prepared for careers in industry, government agencies, professional studies, or graduate studies in related disciplines.

The Jean and Ric Edelman Fossil Park, a unique world-class reservoir of ancient ecosystems near the Glassboro campus, is a living laboratory and resource for education, research, and outreach. The Edelman Fossil Park offers students unparalleled opportunities for hands-on learning experiences and prominent research in paleontology. Because of the appeal of the Edelman Fossil Park and the importance of STEM outreach, the School coordinates with the Rowan University STEM Center to provide P-12 STEM outreach for the region.

Departments

The School consists of the Department of Geography, Planning and Sustainability, the Department of Geology, and the Department of Environmental Science.

Programs Offered

All programs offered are listed below in order of degree/program type and then in alphabetical order by program name. Details about each program are then listed within the catalog in the same order. For the most up-to-date information regarding mode of delivery options for your program of interest, please visit global.rowan.edu.

DOCTORAL DEGREES

Program Name	Format/location	Program/Major Codes	Avail FT/PT	Total credits
Doctor of Philosophy in Geology	Face-to-Face at Glassboro campus	PHD-GEOLOGY/D400	Full-time	72

MASTER'S DEGREES

Program Name	Format/location	Program/Major Codes	Avail FT/PT	Total credits
Master of Science in Urban and Regional Planning	Face-to-Face at Glassboro campus	MS- URBANREPL/G899	Both	46

CERTIFICATES OF GRADUATE STUDY / COGS (NON-DEGREE)

Program Name	Format/location	Program/Major Codes	Avail FT/PT	Total credits
Certificate of Graduate Study in Sustainability Studies	Face-to-Face at Glassboro campus	COG-SUSTAIN/G419	Both	9
Certificate of Graduate Study in Urban and Regional Planning	Face-to-Face at Glassboro campus	COG-UREGPL/G943	Both	9

POST-BACCALAUREATE PROGRAMS (NON-DEGREE)

Program Name	Format/location	Program/Major Codes	Avail FT/PT	Total credits
Post-Baccalaureate Certificate in Cartography & GIS	Face-to-Face at Glassboro campus	CRT-CARTGIS/A206	Both	22

Academic Program Policy Categories

For the purposes of both the Minimum Satisfactory Academic Progress policy and the Minimum Graduation Requirements policy, post-baccalaureate/graduate academic programs at Rowan University fall into one of three major categories which are identified by their grade requirements as outlined below. (See individual program descriptions for academic categories.)

Category 1: To maintain Minimum Satisfactory Academic Progress in and to successfully graduate from a Category 1 program students must:

- Earn no more than two total "B-" grades
- Earn no grades lower than a "B-"
- Earn an official cumulative GPA (according to matriculation level) of at least 3.000 on Rowan's 4.000 scale

Category 2: To maintain Minimum Satisfactory Academic Progress in and to successfully graduate from a Category 2 program students must:

- Earn no grades lower than a "B-"
- Earn an official cumulative GPA (according to matriculation level) of at least 3.000 on Rowan's 4.000 scale

Category 3: To maintain Minimum Satisfactory Academic Progress in and to successfully graduate from a Category 3 program students must:

- Earn no more than two total C grades of any combination of "C+" or "C." (C- grades are not acceptable.)
- Earn no grades lower than a "C"
- Earn an official cumulative GPA (according to matriculation level) of at least 3.000 on Rowan's 4.000 scale

Policy Prior to Fall 2013 Matriculation

The academic review and minimum graduation requirements review policies will be applied to Rowan graduate and post-baccalaureate students who matriculate beginning Fall 2013 or later; however, current students (those matriculated and active before Fall 2013) will be grandfathered under the prior policy/practice, whose grade and GPA requirements are the same as Academic Review Category 3.

Doctoral Degrees

Doctor of Philosophy in Geology (Ph.D.)

The Ph.D. in Geology, housed with the School of Earth & Environment, is a terminal degree program designed to prepare students for successful careers in scientific education and research. The program offers a highly flexible curriculum with an emphasis on developing the skills, expertise, and commitment necessary for graduates to become leaders in the scientific research community.

The heart of the program is the Jean and Ric Edelman Fossil Park, a unique living laboratory offering opportunities for study in multiple subject matter areas within the geosciences and for inquiry into critical issues involving climate change, biodiversity, and sustainability. The Fossil Park is also a key forum for outreach to the community at large on these issues as well as on STEM education. The Fossil Park will have a state-of-the-art museum and visitor center, with the goal of official national accreditation for the museum as a type-specimen repository, where researchers, including Ph.D. students, can come and study the collections.

The Ph.D. in Geology contributes directly to the advancement of the strategic pillar of Quality. The research activity associated with the program will elevate the reputation of the University, attracting high-caliber faculty, visiting scholars, post-doctoral researchers, and students and enhancing the quality of educational offerings at all levels.

Program Requirements

The program is composed of core courses in geology, electives, research; and the production of a research based dissertation. Students will develop a robust foundation in geology and selected areas of interest through coursework, and will then build on and expand their theoretical and methodological expertise through the conduct of their research. The program will offer three major areas of specialty in paleontology, planetary science (cosmochemistry, asteroid science, and meteoritics), and global climate interactions. The program of study will also include training in the professional and soft skills necessary for a successful career, including identification and pursuit of external funding, teaching, and outreach.

The following courses make up the Doctor of Philosophy in Geology program.

Required Courses 72 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
GEOL 01701	Seminar in Geology	4
GEOL 01702	Advanced Seminar in Geology	4
GEOL 01703	Proposal Writing and Grant Management	3
GEOL 01704	Communication and Ethics in Science	3
GEOL 01705	Graduate Colloquium	2
GEOL 01706	Advanced Graduate Colloquium	2
GEOL 01710	Fundamental Research 1	6
GEOL 01711	Fundamental Research 2	6
GEOL 01712	Topics in Graduate Geology	3
GEOL 01713	Advanced Topics in Graduate Geology	3
GEOL 01730	Dissertation Research in Geology (Total of 6 semesters of dissertation research required)	5

Total Required Credits for the Program 72 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and/or Thesis Requirements:

- Students must successfully pass the Ph.D. qualification exam and candidacy exam.
- Students must complete and defend a doctoral dissertation.

Minimum Required Grades and Cumulative GPA

The Doctor of Philosophy in Geology is a Category 1 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
Professor Harold Connolly
Discovery Hall
856.256.5261
connollyh@rowan.edu

Master's Degrees

Master of Science in Urban and Regional Planning (M.S.)

As we move to an era of decreased reliance on fossil fuels and rapidly diminished available land for development, efficiency in the use of the remaining land and in the sustainability of every dimension of our lifestyles will become ever more critical. Wise planning will become increasingly necessary. Planners are in demand to fill positions in consulting, industry, government, and non-profit organizations. A master's degree in Urban & Regional Planning is recognized as the terminal degree for this profession.

This program focuses on all planning fields commonly practiced in southern New Jersey but at the same time highlights their global significance related to climate change, environmental degradation, sustainability, resiliency, and diversity. This program accommodates the needs of full-time professionals through a combination of evening and online courses.

The program accepts students with undergraduate degrees from both science and liberal arts backgrounds. Graduates are qualified to work within government, private, or nonprofit sectors. Students interested in advanced studies will have the opportunity to work on research projects under the supervision of faculty members.

The M.S. in Urban and Regional Planning is a full-time or part-time program offered in a face-to-face format with some online options. It requires the completion of 46 graduate semester hours (14 courses).

Program Requirements

Required Courses 31 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
PLAN 31580	Introduction to Planning: Past, Present, and Future	3
PLAN 31686	Community Planning, Engagement, and Design	3
PLAN 31590	Research Methods in Planning	3
PLAN 31589	Environmental and Sustainability Planning	3
PLAN 31685	Planning, Practice, Law, and Ethics	3
GEOG 31660	Fundamentals of Geographic Information Systems*	4
PLAN 31593	Planning Communication	3
GEOG 16661	Geovisualization	3
PLAN 31695	Planning Studio	6

***NOTE:** Students who have not had prior professional work experience or academic coursework in GIS must take the foundational course GEOG 16560 Introduction to Mapping and GIS before being permitted to take GEOG 31660 Fundamentals of Geographic Information Systems.

Elective Courses 15 s.h.

(s.h.: semester hours/credit hours)

The following elective courses are offered through the Department of Geography, Planning, and Sustainability and should be selected strategically in consultation with a program advisor to advance the student's professional interests.

Course #	Course Title	S.H.
ENST 94501	Sustainable Commerce*	3
ENST 94502	Sustainability Assessment*	3
ENST 94503	Perspectives on Environmental, Regulation Policy, and Law*	3
ENST 94504	Topics in Sustainability Innovation and Problem Solving*	3
GEOG 16550	Selected Topics in Geography, Planning and Sustainability	3
GEOG 16560	Introduction to Mapping and GIS	3
GEOG 16561	Cartography	3
GEOG 16562	Web-Based GIS Mapping	3
GEOG 16565	Geographic Information Systems (GIS) Topics and Applications	3
GEOG 16591	Independent Study in Geography	3
GEOG 16670	Drones, Planes, and Satellites	3
PLAN 31540	Advanced Historic Preservation	3
PLAN 31587	Graduate Seminar in Food Systems Planning	3

*Completing any three of the following courses as program electives will allow the student to complete a separate Certificate of Graduate Studies in Sustainability Studies while simultaneously fulfilling elective requirements for the M.S. in Urban and Regional Planning: ENST 94501, ENST 94502, ENST 94503, and/or ENST 94504

The following elective courses are offered through other departments at Rowan University and should be selected strategically in consultation with a program advisor to advance the student's professional interests.

CEE 08513	Environmental Management (Civil Engineering)	3

EDPA 02510	Introduction to Policy Analysis	3
MAPR 01528	Communication with Special Publics (Public Relations)	3
MAPR 01534	Small Group Communications (Public Relations)	3
MAPR 01535	Topics in Sustainability Innovation and Problem Solving	3
MAPR 01541	Understanding and Writing Grants and Proposals (Public Relations)	3
MAPR 01548	Graduate Writing Basics (Public Relations)	3
MIS 02525	Project Management (Marketing and Business Information System)	3
MIS 02538	Database Design (Marketing and Business Information System)	3
SE 01503	Environmental Policy (Sustainable Energy)	3
SE 01504	Environmental Management (Sustainable Energy)	3
SOC 08575	Social Determinants of Health: Theory and Intervention in Urban Settings (Sociology)	3
SOC 08578	Critical Race Theory: Application and Intervention (Sociology)	3
SOC 08599	Urban Environmental Health (Sociology)	3
SOC 08600	Social Experience of City Life and Urban Inequalities (Sociology)	3
MAWR 01555	Writing for Electronic Communities (Writing Arts)	3
Total Required Credits for the Program		46 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and/or Thesis Requirements

Students must complete a planning studio project.

Minimum Required Grades and Cumulative GPA

The Master of Science in Urban and Regional Planning is a Category 1 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Academic Advisor
Mahbubur Meenar Ph.D.
Program Coordinator
856.256.5812
meenar@rowan.edu

Certificates of Graduate Study (COGS)

Certificate of Graduate Study in Sustainability Studies (COGS)

The certificate will offer students a credential demonstrating their understanding of applying sustainability concepts in the 'real world'. Research in STEM fields has resulted in amazing advances in our societal ability to generate solutions to environmental challenges but there is frequently a disconnect between the solutions and their implementation. The COGS in Sustainability Studies and the courses that comprise the program are aimed at helping STEM students understand avenues for implementing comprehensive sustainability solutions.

Program Requirements

Required Courses 9 s.h.

(s.h.: semester hours/credit hours)

Choose three (3) from the following options.

Course #	Course Title	S.H.
ENST 94501	Sustainable Commerce	3
ENST 94502	Sustainability Assessment	3
ENST 94503	Perspectives on Environmental Regulations, Policy & Law	3
ENST 94504	Topics in Sustainability Innovation and Problem Solving	3
Total Required Credits for the Program		9 s.h.

Foundation Courses

None

Graduation/Exit/Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The Certificate in Graduate Study in Sustainability Studies is a Category 3 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
Kevin Keenan, Ph.D., AICP
Department Chairperson
856.256.4321
keenankp@rowan.edu

Certificate of Graduate Study in Urban and Regional Planning (COGS)

The Certificate of Graduate Study (COGS) introduces students to theory and practice of Urban and Regional Planning. Students will survey the discipline's history and major theoretical advancements before achieving an in-depth understanding of environmental and community planning practices. Students will also learn the major regulatory frameworks operating in the State of New Jersey as well as nationally recognized ethical principles to guide a successful career in planning.

Program Requirements

Required Courses 9 s.h.

(s.h.: semester hours/credit hours)

Choose three (3) from the following options.

Course #	Course Title	S.H.
PLAN 31580	Introduction to Planning: Past, Present, and Future	3
PLAN 31589	Environmental / Sustainable Planning	3
PLAN 31685	Planning Practice, Law, and Ethics	3
PLAN 31686	Community Planning, Engagement, and Design	3

Total Required Credits for the Program 9 s.h.

Foundation Courses

None

Graduation/Exit/Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The Certificate in Graduate Study in Urban and Regional Planning is a Category 3 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information
Kevin Keenan, Ph.D., AICP
Department Chairperson
856.256.4321
keenankp@rowan.edu

Post-Baccalaureate Programs (Non-degree)

Post-Baccalaureate Certificate in Cartography & GIS

This certificate program is designed to accommodate working professionals in planning, public health, engineering, business, and other areas who wish to gain expertise in cartography and GIS.

Students who wish to enter the program must meet with the program coordinator to plan their programs. Students, in consultation with the program coordinator, select a total of 22 semester hours (s.h.). Students transferring in credits must complete at least 10 of the total required s.h. while enrolled in the program, including the GEOG 16390-Geography Research Clinic/Studio one (1) credit portfolio requirement.

Program Requirements

Required Courses 22 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
Introductory Course		3

Students must take any 100 or 200 level course (excluding those listed as "GIS Core Courses" below) within the Geography, Planning, and Sustainability Department in consultation with the program coordinator.

GIS Core Courses 9

Students must take the following three courses: (9 s.h.)

GEOG 16160	Introduction to Mapping and Geographic Information Sciences	3
GEOG 16260	Fundamentals of Geographic Information Systems	3
GEOG 16261	Cartography	3

GIS Program Electives 9

Students must take three additional courses in consultation with an advisor: (9 s.h.). Courses are typically chosen from the GIS course bank but substitutions can be made by the advisor to better address the student's interests. One or more of the following courses can also count as GIS program electives if they are taken with a defined GIS focus that is approved by the advisor.

GEOG 16290	History & Methods of Modern Geography	3
GEOG 16390	Geography Research Clinic/Studio	3
GEOG 16490	Undergraduate Research Seminar in Geography (Senior Seminar)	3

GIS Course Bank

GEOG 16160	Introduction to Mapping and Geographic Information Sciences	3
GEOG 16260	Fundamentals of Geographic Information Systems	3
GEOG 16261	Cartography	3
GEOG 16350	Quantitative and Qualitative Methods	3
GEOG 16360	Applications of Geographic Information Systems	3
GEOG 16361	Geovisualization	3
GEOG 16370	Drones, Planes, and Satellites	3
GEOG 16371	Remote Sensing II	3
GEOG 16375	Remote Sensing of the Environment	3
GEOG 16460	Intro Geo. Info. Sys.	3
GEOG 16462	Web-Based GIS Mapping	3
GEOG 16565	Geographic Information Systems (GIS) Topics and Applications	3

Geography Research Clinic 1

Students in the program will enroll in GEOG 16390-Geography Research Clinic/Studio for one credit. While enrolled students will compile a portfolio of major works (final projects etc.) completed throughout their courses for this concentration. They will package these works alongside a summary of the GIS and Cartography design concepts and methods incorporated into their projects. The completed portfolio is to be reviewed by the faculty advisor as a requirement for completion of the certificate.

Total Required Credits for the Program 22 s.h.

Foundation Courses

None

Graduation/Exit/Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The Post-Baccalaureate in Cartography & GIS is a Category 3 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Coordinator/Advisor Contact Information

Zachary Christman, Ph.D.
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Cooper Medical School of Rowan University

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Mission Statement

Cooper Medical School of Rowan University is committed to providing humanistic education in the art and science of medicine within a scientific and scholarly community in which inclusivity, excellence in patient care, innovative teaching, research, and service to our community are valued. Our core values include a commitment to: diversity, personal mentorship, equity, professionalism, collaboration and mutual respect, civic responsibility, patient advocacy, and life-long learning.

Vision

Cooper Medical School of Rowan University will distinguish itself as an innovative leader in medical education and related research with emphasis on developing and validating comprehensive systems of healthcare for underserved populations as a model to address the challenges of accountable patient care in 21st century and beyond.

Departments

The medical school is comprised of the following departments: Biomedical Sciences, Medical Education, Student Affairs & Admissions, Diversity & Community Affairs, Research, Program & Business Development, and Finance, Administration & Operations.

Academic Program Policy Categories

For the purposes of both the Minimum Satisfactory Academic Progress policy and the Minimum Graduation Requirements policy, post-baccalaureate/graduate academic programs at Rowan University fall into one of three major categories which are identified by their grade requirements as outlined below. (See individual program descriptions for academic categories.)

Category 1: To maintain Minimum Satisfactory Academic Progress in and to successfully graduate from a Category 1 program students must:

- Earn no more than two total "B-" grades
- Earn no grades lower than a "B-"
- Earn an official cumulative GPA (according to matriculation level) of at least 3.000 on Rowan's 4.000 scale

Category 2: To maintain Minimum Satisfactory Academic Progress in and to successfully graduate from a Category 2 program students must:

- Earn no grades lower than a "B-"
- Earn an official cumulative GPA (according to matriculation level) of at least 3.000 on Rowan's 4.000 scale

Category 3: To maintain Minimum Satisfactory Academic Progress in and to successfully graduate from a Category 3 program students must:

- Earn no more than two total C grades of any combination of "C+" or "C." (C- grades are not acceptable.)
- Earn no grades lower than a "C"
- Earn an official cumulative GPA (according to matriculation level) of at least 3.000 on Rowan's 4.000 scale

Policy Prior to Fall 2013 Matriculation

The academic review and minimum graduation requirements review policies will be applied to Rowan graduate and post-baccalaureate students who matriculate beginning Fall 2013 or later; however, current students (those matriculated and active before Fall 2013) will be grandfathered under the prior policy/practice, whose grade and GPA requirements are the same as Academic Review Category 3.

Post-Baccalaureate Programs (Non-degree)

Post-Baccalaureate Certificate in Advanced Premedical Studies

The Post-Baccalaureate in Advanced Premedical Studies at CMSRU is a flexible academic enhancement program offered through Cooper Medical School of Rowan University (CMSRU) and Rowan Global. Courses are led by expert faculty and build upon the knowledge base of the premedical core sequence from an undergraduate degree, incorporating high-level problem solving and teamwork. Students will engage in a fast-paced hybrid curriculum that combines online sessions with active learning modalities, augmenting the learning skills they will need in order to excel in medical school. Focused advising and professional development occur throughout the program, including the medical school application process. Successful students who excel in the program and meet specific linkage agreement criteria are eligible for an automatic interview at local participating allopathic, osteopathic and podiatric medical schools.

Program Requirements

Required Courses 27 s.h.

(s.h.: semester hours/credit hours)

Course #	Course Title	S.H.
SOC 08121	Introduction to Sociology for the Premedical Student	3
PSY 01108	Essentials of Psychology for the Pre-Health Student	3
PMED 01310	Medical Biochemistry: A Clinical Approach	3
PMED 01320	Cellular Basis of Molecular and Regenerative Medicine	3
PMED 01420	Human Physiology	3
PMED 01430	Medical Microbiology	3
PMED 01410	Medical Genetics	3
PMED 01440	Mechanisms of Disease	3
PMED 01210	Introduction to Public Health	3

Total Required Credits for the Program 27 s.h.

Foundation Courses

None

Graduation/Exit, Benchmark, and/or Thesis Requirements

None

Minimum Required Grades and Cumulative GPA

The Post-Baccalaureate in Advanced Premedical Studies is a Category 3 program.

For details regarding satisfactory academic progress and graduation requirements, please visit University Policies.

Program Contact Information
David Swope
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Rowan University School of Veterinary Medicine

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Mission Statement

RowanSVM will shape the future of veterinary medicine and animal healthcare in keeping with Rowan University's strategic pillars of Access, Affordability, Quality, and Economic Engine. Our innovative curriculum, exceptional veterinary care, compassionate community service, and commitment to research, will ensure our graduates are prepared to serve society and meet the challenges in veterinary medicine now and in the future.

Our mission will be achieved by:

- Pioneering discovery of new knowledge in basic and applied sciences to address regional, national, and global concerns in human and animal health.
- Utilizing an innovative hybrid clinical curriculum that combines experiential learning in a university teaching hospital with clinical partnerships, to ensure clinically competent and well-rounded veterinary graduates.
- Collaborating with partners in the Rowan community, industry, and government veterinary institutions, we will broaden the lens of education in veterinary medicine, preparing our graduates to serve society in a multitude of roles.
- Expanding the availability of veterinary care to underserved communities in the region and graduating compassionate and culturally aware veterinarians to be the leaders of tomorrow in community service and outreach.

Vision

By innovating the model of veterinary medical education and offering the first Doctor of Veterinary Medicine degree in New Jersey, the School of Veterinary Medicine will provide innovative programs to train veterinarians, pioneer research, and discover new knowledge in basic and applied sciences while maintaining a strong commitment to specialized veterinary medical care and service.

Values

Our core values include a commitment to diversity and inclusion, equity, mentorship, professionalism, animal advocacy, wellness, and collaboration in the advancement of veterinary medicine. Our values in the School of Veterinary Medicine include:

- Excellence
- Diversity in People and Ideas
- Collaboration
- Empathy and Compassion
- Innovation
- Personal Accountability
- Transparency and Trust

Departments

The School of Veterinary Medicine is comprised of the following departments: Department of Clinical Sciences, Department of Diagnostic Medicine and Pathobiology, and Department of Anatomy and Physiology.

Accreditations

American Veterinary Medical Association Council on Education (in progress)

Programs Offered

All programs offered are listed below in order of degree/program type and then in alphabetical order by program name. Details about each program are then listed within the catalog in the same order. For the most up-to-date information regarding mode of delivery options for your program of interest, please visit svm.rowan.edu.

DOCTORAL DEGREES

Program Name	Format/location	Program/Major Codes	Avail FT/PT	Total credits
Doctor of Veterinary Medicine	TBD	TBD	TBD	TBD

Faculty List

Department of Accounting and Finance

Folkinshteyn, Daniel(2011) Professor
B.A. Yale; MS, MBA, Ph.D Temple University

Henry, Joseph(2019) Assistant Professor
B.A., University of California at Irvine; M.S., West Virginia University; Ph.D., The Pennsylvania State University

Hughes, Diane(1987) Associate Professor
B.A., Rutgers College; M.B.A., Long Island University; J.D., Rutgers University

Isik, Ihsan(2001) Professor
B.S., Middle East Technical University; M.S., Texas Tech University, M.A., Ph.D., University of New Orleans

Li, Pei(2020) Assistant Professor
B.S., Southwestern University of Finance and Economics; Ph.D., Rutgers University

Lin, Liang Ju (Tony)(2020) Assistant Professor
B.S., National Taipei University of Technology; M.S., University of California; Ph.D., Drexel University

Lysak, Amy(2017) Assistant Professor
B.S., Rutgers University (New Brunswick); M.S., University of Virginia; Ph.D., Rutgers University (Newark)

Marmon, Richard(1986) Associate Professor
B.S., Glassboro State College (Rowan); M.B.A., LaSalle University; J.D., Widener University; CPA; CMA; LL.M., Villanova University

McFarland, Daniel J.(2002) Professor
B.S., M.B.A., Ph.D., Drexel University

Moore, Jordan(2017) Assistant Professor
B.S., Massachusetts Institute of Technology; M.S.B.A., Ph. D., University of Rochester

Omar, Ayishat(2018) Assistant Professor
B.S., Ahmadu Bello University; M.B.A., Morgan State University; Ph.D., Morgan State University

Papakroni, Erlina(2019) Assistant Professor
B.S., University of Tirana; M.P.A., Ph.D., West Virginia University

Sacchetta, Robert(2018) Senior Lecturer
B.A., Glassboro State College (Rowan University); M.S., Drexel University; CPA

Sagedy, Robert(2018) Lecturer
B.S., St. Francis de Sales; M.B.A., Mount St. Mary's; CPA

Scarpa, Robert(2013) Instructor
B.S., St. Joseph's University; M.B.A., Drexel University

Uygur, Ozge(2010) Professor
B.S., Middle East Technical University; Ph.D., Temple University

Van Hook, Andrew(2018) Sentior Lecturer
B.S., Rowan University; M.S., Goldy-Beacom College; CPA

Wang, Jia(2007) Professor
B.S., Tsinghua University: M.S., Ph.D., University of Massachusetts-Amherst

Weidman, Stephanie M.(1995) Professor
B.S., University of Delaware; M.B.A., Duke; Ph.D., Drexel University; CMA

Xue, Ying (Ian)(2019) Assistant Professor
B.S., University of Hong Kong; M.S., Stanford University; Ph.D., Duke University

Zhang, Mei(2009) Associate Professor
B.A., M.S., Tsinghua University-China; Ph.D., University of Maryland

Department of Art

Appelson, Herbert(1967) Professor
B.A., Brooklyn College; M.S., M.F.A., Univ. of Wisconsin; Ed.D., Columbia University

Drumgoole, Jennifer(2018) Assistant Professor
B.A., Fordham University; M.F.A., Yale School of Art

Kitson, Jennifer(2015) Associate Professor
B.A., San Francisco State University; M.A., Cal State University, Los Angeles; Ph.D., Arizona State University

Ohanian, Nancy L.(1992) Professor
B.F.A., Layton School of Art and Design; M.F.A., Pratt Institute

Sophy, Nancy M.(2022) Lecturer
B.A., Moravian College; M.F.A., Pennsylvania Academy of the Fine Arts

Sweigart, Donna(2004) Associate Professor
BFA Arcadia University, MFA Tyler School of Art Temple University

Thomas, Skeffington N.(1997) Professor
B.A., Lewis and Clark College; M.F.A., Southern Illinois University

Watanabe, Marisa(2022) Lecturer
B.S., Drexel University; M.F.A., Tyler School of Art, Temple University

Zarfsaz, Mina(2022) Assistant Professor
B.A., Alzahra University; B.F.A., SUNY Plattsburgh; M.F.A., Montclair State University

Department of Biological and Biomedical Sciences

Alpaugh, Mary(2016) Associate Professor
B.S., King's College; Ph.D., University of Houston

Bealor, Matthew(2010) Assistant Professor
B.S., California State University; M.S., San Diego State University; Ph.D., University of Colorado

Bentivenga, Stephen(2021) Professor and Department Head
B.A., Illinois Wesleyan University; M.S., Illinois State University; Ph.D., Kansas State University

Bogush, Marina Leonidovna(2018) Lecturer
B.S., M.S., Lomonosov Moscow State University; Ph.D., Research Center for Medical Genetics, Academy of Medical Sciences

Carone, Benjamin(2016) Associate Professor
B.S., Ph.D., University of Connecticut

Chen, Yong(2019) Assistant Professor
B.S., Shandong University, China, Ph.D., joint from Shandong U and University of Georgia

Crumrine, Patrick(2006) Associate Professor
B.S., Plattsburgh State University; Ph.D., University of Kentucky

DiStefano, Ginnene(2018) Senior Lecturer
B.A., Arcadia University; Ph.D., Drexel University

Eaton, Gregory(2018) Senior Lecturer
B.S., Rowan University; Ph.D., Thomas Jefferson University

Farber, Grace(2021) Associate Professor
PhD

Grove, Michael W.(2001) Associate Professor
B.S., The Ohio State University; Ph.D., University of South Carolina

Heindl, Jason(2022) — Assistant Professor
B.A., Amherst College; Ph.D. Harvard University

Holbrook, Luke T.(1999) — Professor
B.S., Fordham University; M.S., Ph.D., University of Massachusetts

Hough, Gerald(2003) — Associate Professor
B.S., Purdue University: M.S., Ph.D., The Ohio State University

Iftode, Cristina(2001) — Professor
B.S., M.S., University of Bucharest; M.S., Ph.D., New York University-Medical Center

Krufka, Alison(2003) — Associate Professor
B.S., College of William and Mary; Ph.D., University of Wisconsin-Madison

Krummenacher, Claude(2014) — Associate Professor
B. S., Ph.D. University of Lausanne, Switzerland

Kruse, Svjetlana(2014) — Associate Professor
B.A., M.Sc. University of South Alabama; Ph.D. University of Copenhagen

O'Brien, Terry(2000) — Associate Professor
B.S., M.S., University of Iowa; Ph.D. University of California - Berkeley

Richmond, Courtney E.(2001) — Professor
B.A., Swarthmore College; Ph.D., University of South Carolina

Ruhl, Nathan(2019) — Senior Lecturer
B.S., Allegheny College; M.S., Saint Joseph's Univerity; Ph.D., Ohio University

Thomas, Shelly(2019) — Lecturer
B.S., Eastern University; Ph.D., University of Maine

Travis, Matthew(2018) — Senior Lecturer
B.A., Bowdoin College; Ph.D., State University of New York at Stony Brook

Wright, Sara(2019) — Lecturer
B.S., The University of Texas at Austin; Ph.D., Washington University

Department of Biomedical Engineering

Abedin-Nasab, Mohammad(2020) — Assistant Professor
B.S., KNT University of Technology; M.S., Ph.D., Sharif University of Technology

Beachley, Vince(2014) — Associate Professor
B.S. Virginia Tech; Ph.D. Clemson University

Byrne, Mark(2014) — Professor and Department Head
B.S., Carnegie Mellon University; M.S., Ph.D., Purdue University

Daringer, Nichole(2019) — Assistant Professor
B.S.E., University of Iowa; Ph.D. Northwestern University

Galie, Peter(2015) — Associate Professor
BSE - Princeton University; MS Rensselaer Polytechnic; PhD -University of Michigan

Lowman, Anthony(2013) — Professor
B.S. U of Virginia; Ph.D. Purdue

Riley, Rachel(2020) — Assistant Professor
B.S. Rowan University.; Ph.D. University of Delaware

Staehle, Mary M.(2010) — Associate Professor
B.S., The Johns Hopkins University; Ph.D., University of Delaware

Vega, Sebastian(2018) — Assistant Professor
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Department of Chemical Engineering

Capellades, Gerard(2020) Assistant Professor
Ph.D., Technical University of Denmark

Dahm, Kevin D.(1999) Professor
B.S., Worcester Polytechnic; Ph.D., Massachusetts Institute of Technology

Gephardt, Zenaida Otero(1989) Professor
B.S., Northwestern University; M.S., Ph.D., University of Delaware

Hesketh, Robert P.(1996) Professor
B.S., University of Illinois, Champaign-Urbana; Ph.D., University of Delaware

Lau, Kenneth(2022) Professor and Department Head
B.Eng., Chemical, National University of Singapore; PhD., Massachusetts Institute of Technology

Meadowcroft, Tom(2018) Senior Lecturer
B.S., University of Toronto; M.S., Massahusetts Institute of Technology; Ph.D., Massachusetts Institute of Technology

Newell, James(1998) Professor
B.S., Carnegie-Mellon University; M.S., Penn State University; Ph.D., Clemson University

Palmese, Giuseppe(2021) Professor
B.S., Princeton University, Ph.D., University of Delaware

Savelski, Mariano J.(1999) Professor
B.S., University of Buenos Aires; M.S., University of Tulsa; Ph.D., University of Oklahoma

Stanzione III, Joseph F.(2013) Professor
B.S., Drexel University, Ph.D., University of Delaware

Thompson, Gary(2017) Assistant Professor
B.S., University of South Carolina; Ph.D., Clemson University

Yenkie, Kirti(2017) Assistant Professor
B. Tech, Laxminarayan Institute of Technology, India; M. Tech, Indian Institute of Technology; Ph.D., University of Illinois at Chicago

Department of Chemistry and Biochemistry

Barrett, Kristen(2018) Senior Lecturer
B.S., Ph.D., University of Sciences Philadelphia

Caputo, Greg(2007) Professor and Associate Dean
B.S., The Stevens Institute of Technology; Ph.D., Stony Brook University

Grinias, James(2016) Associate Professor
B.S., Eastern Michigan University; Ph.D., University of North Carolina-Chapel Hill

Hoy, Erik(2018) Assistant Professor
BS, Tennessee Technological University; MS, The University of Chicago; PhD, The University of Chicago

Jonnalagadda, Subash(2008) Professor and Department Head
B.Sc., Pondicherry University; M.Sc., University of Hyderabad; Ph.D., Purdue University

Keck, Thomas(2014) Associate Professor
B.S., University of Southern California; Ph.D., Oregon Health & Science University

Kelly, Mary Allison(2018) Lecturer
BS, University of Maryland; PhD, University of North Carolina, Chapel Hill

Liu, Zhiwei(2021) Associate Professor
PhD

Lu, Ping(2019) Assistant Professor
B.S., M.S., Donghua University; Ph.D., University of California - Davis

Moura-Letts, Gustavo(2013) Associate Professor
B.S., Universidad Peruana; Ph.D., University of Pittsburgh

Mucha, Neil(2018) Lecturer
BS, Pennsylvania State University; PhD, University of Vermont

Mugweru, Amos(2006) Professor
B.S., Jomo Kenyatta University of Agriculture and Technology; Ph.D., University of Connecticut

Perez, Lark(2012) Associate Professor
B.S., Long Island University; PhD., Yale University

Pilarz, Matthew(2018) Lecturer
BS, Tufts University; MS, University of Pennsylvania; PhD, Purdue University

Pophristic, Vojislava(2021) Professor and Dean
B.Sc., University of Belgrade; PhD., Rutgers University

Quarels, Rashanique(2020) Assistant Professor
B.S., Southern University; Ph.D., Louisiana State University

Ramanujachary, Kandalam V.(1994) Professor
B.S., Andhra University; M.S., Andhra University; Ph.D., Indian Institute of Technology

Toal, Siobhan(2019) Lecturer
B.S., Carnegie Mellon University; Ph.D., Drexel University

Vaden, Timothy(2010) Professor
B.S., Midwestern State University; Ph.D., University of Illinois

Wang, Zhihong(2022) Professor

Wu, Chun(2013) Associate Professor
B.S., Xiamen University; Ph.D., University of Delaware

Yu, Lei(2008) Professor
B.S., M.S., Jilin University; Ph.D., Changchun Institute of Applied Chemistry

Department of Civil and Environmental Engineering

Ahn, Jeong Eun(2020) Assistant Professor
BS - Dongguk University, Seoul, South Korea;MS Georgia Tech; PhD NYU

Cleary, Douglas B.(1998) Professor
B.S., M.S., Ph.D., Purdue University

Ghasemi, Seyed Hooman(2021) Assistant Professor
B.S., Civil Engineering, Qazvin Uninersity, Iran; M.S. Civil Engineering, Zanjan University, Iran; Ph.D. Civil Engineering Auburn University

Jahan, Kauser(1996) Professor and Department Head
B.S., Engineering University, Bangladesh; M.S., University of Arkansas; Ph.D., University of Minnesota

Jalayer, Mohammad(2018) Associate Professor
B.S. Azad Univerity of Mashhad; MS Sharif University of Technology; Ph.D. Auburn University

Lomboy, Gilson(2016) Associate Professor
BS - Mapua Institute of Technogy; ME - Asian Institute; PhD AIT / Iowa State University

Mantawy, Islam(2022) Assistant Professor

Mehta, Yusuf A.(2001) Professor
B.S., University of Bombay, India; M.S., University of Oklahoma; Ph.D., Pennsylvania State University

Riddell, William(2004) Associate Professor
B.S., University of Massachusetts-Amherst; Ph.D., Cornell University

Torlapati, Jagadish(2019) Senior Lecturer

Trias-Blanco, Adriana(2020) Assistant Professor
BS Central University of Venezuela;MS and PhD Rutgers University

Zhu, Cheng(2017) Assistant Professor
B.Eng., Nanyang Technological University, Singapore; M.Eng., Nanyang Technological University, Singapore; M.S., Georgia Institute of Technology; Ph.D., Georgia Institute of Technology

Department of Civil and Environmental Engineering, Department of ExEEd

Everett, Jess W.(1998) Professor
B.S., M.S., Ph.D., Duke University

Department of Clinical Sciences

Edson, Matthew(2021) Professor and Founding Dean
BS, Rutgers University; DVM, Kansas State University; MICP; CVPM; MRCVS

Fordham, Margaret(2022) Associate Professor and Director of Veterinary Clinical Skills
DVM, Cornell University College of Veterinary Medicine

Inzana, Karen(2022) Professor and Associate Dean of Academic Affairs
DVM, University of Tennessee; PhD, University of Wisconsin; DACVIM (Neurology)

White, Kirsten(2022) Clinical Assistant Professor
DVM, University of Florida

Department of Communication Studies

Brager, Karen Noel(2018) Lecturer
B.A., Arcadia University; M.A., La Salle University

Broad, Garrett(2022) Associate Professor
B.A., Rutgers University; M.A., Ph.D., University of Southern California

Cirucci, Angela(2014) Assistant Professor
B.A., Rowan University, M.A., Ph.D., Temple University

Coleman, Miles(2015) Assistant Professor
B.A., M.A., California State University at Sacramento; Ph.D., University of Washington

Coughlan, Patricia A.(2018) Senior Lecturer
B.A. Rowan University (Glassboro State College); M.A., University of Connecticut

Cypher, Joy M.(2000) Professor
B.A., Loyola University, Chicago; M.A., Ph.D., Purdue University

Feaster, John(2010) Associate Professor
B.S., West Virginia University; M.A., Ph.D., Ohio State University

Harman, Katherine R.(2018) Senior Lecturer
B.A. Rowan University; M.A., Towson University

Haynes, Julie A.(1998) Professor
B.A., University of Richmond; M.A., Texas A&M University; Ph.D., Pennsylvania State University

Hottle, Andrew D.(2004) Professor
B.A., M.A., Ohio State University; Ph.D., Temple University Tyler School of the Arts

Ikpah, Maccamas M.(1994) Associate Professor
B.A., Eastern Washington University; M.E., Gonzaga University; Ed.D., Oklahoma State University

Marshall, Pam(2010) Assistant Professor
B.A., Montclair State Univeristy; M.A., Temple University

Popa, Clara(2004) Associate Professor
B.A., University of Bucharest; M.A., Ph.D.,Kent State University

Qadar, Farah(2022) Lecturer
B.A., Harvard University; M.A., University of Arizona

Schowalter, Daniel F.(2002) Associate Professor
B.S., University of Wisconsin-Stevens Point; M.A., University of Arkansas; Ph.D., Indiana University

Shi, Rui(2018) Assistant Professor
B.A. Beijing Foreign Studies University; M.A. Wake Forest University; Ph.D. University of Pennsylvania

Strasser, Daniel S(2012) Professor
B.A. College of Mount Saint Joseph; M.A. Northern Kentucky University; Ph.D., University of Denver

Department of Computer Science

Baliga, Ganesh R.(1993) Professor
B. Tech., M. Tech., Indian Institute of Technology, Bombay; M.S., Ph.D., University of Delaware

Bergmann, Seth D.(1980) Associate Professor
B.S., Rensselaer Polytechnic Institute; M.S.E., University of Pennsylvania.

Breitzman, Anthony(2016) Associate Professor
B.S., Stockton University; M.A., Temple University; M.S., Ph.D, Drexel University

Chien, Chia(2017) Senior Lecturer
B.S., M.S., Drexel University

Chu, Heng Yi (Mike)(2018) Lecturer
B.S., Johns Hopkins University, M.S.B.A., Temple University, Executive Master, University of Pennsylvania

Fiedler, Frank(2022) Senior Lecturer
M.S., Technische Universität Dresden; Ph.D. University of Delaware

Guo, Guimu(2022) Assistant Professor
B.Eng. Shandong Jianzhu University; M. Eng. Tongji University, Ph.D. University of Alabama at Birmingham

Heydari, Vahid(2017) Associate Professor
Ph.D., University of Alabama

Hnatyshin, Vasil Y.(2003) Professor
B.S., Widener University; M.S., Ph.D.,University of Delaware

Ho, Shen-Shyang(2016) Associate Professor
B.S., National University of Singapore; M.S., Ph.D., George Mason University

Hristescu, Gabriela(2000) Associate Professor
B.S.E., Polytechnic Institute of Bucharest, Romania; M.S., Ph.D., Rutgers University.

Kay, Jennifer S.(1998) Professor
B.A., B.S.E., University of Pennsylvania; M.S., Ph.D., Carnegie Mellon University

Kokalj-Filipovic, Silvija(2022) Professor
M.S., University of Belgrade; Ph.D., Rutgers University

Lobo, Andrea F.(1997) Professor
B.S., Universidad de Costa Rica; M.S., Ph.D., University of Delaware

McKee, Patrick(2018) Lecturer
B.A. Rowan University, M.S., Rowan University

Provine, Darren(2018) Senior Lecturer
B.S., University of Maryland, M.A., Rowan University

Rabbitz, Richard(2022) Lecturer
B.S., West Chester University; M.S., University of Pennsylvania

Stinchcombe, Frederick(2022) Lecturer
B.S. University of the West of England; M.S. University of the West of England

Sun, Bo (Beth)(2017) Associate Professor
Ph.D., Old Dominion University

Tinkham, Nancy Lynn(1990) Assistant Professor
B.S., Wheaton College; Ph.D., Duke University

Wang, Ning(2018) Assistant Professor
B.S., University of Electronic Science and Technology, Ph.D., Temple University

Department of Diagnostic Medicine and Pathobiology

Kovacs, Suzie(2023) Associate Professor and Associate Dean of Student Success
MSc, Ontario Veterinary College; PhD, Claremont Graduate University

Tliba, Omar(2022) Professor and Associate Dean of Research and Graduate Studies
MSc, University of Rennes; DVM,El-Tarf College of Veterinary Medicine; PhD, University of Francois Rabellais

Department of Educational Services and Leadership

Callueng, Carmelo(2016) Assistant Professor
B.A., St. Paul University; M.S., De La Salle University; PhD, University of Florida

Coaxum III, James(1999) Associate Professor
B.S., Morehouse College, Ed.M., Harvard University; Ph.D., Vanderbilt University

Ieva, Kara(2010) Associate Professor
B.A., Towson University; M.Ed., Towson University/Loyola College; Ph.D., University of Central Florida

Kerrigan, Monica(2010) Professor/Department Chair
B.S., Haverford College; M.A., Teachers College; Ed.D., Teacher's College

Lu, Huan-Tang(2018) Assistant Professor
B.S., National Tiawan University; m.S. State University of NY at Plattsburg; P.h.D, Ohio University

McCombs, Tyrone(2001) Associate Professor
B.A., M.A., Rutgers University; Ph.D. University of Pennsylvania

Mitani, Hajime(2016) Assistant Professor
B.A. Nihon University, Ed.M., Columbia University; PhD, Vanderbilt University

Sam, Cecile(2016) Assistant Professor
B.A., Loyola Marymount University; M.A., Loyola Marymount University; PhD, University of Southern California

Sun, Qian Anna (2014) Associate Professor
B.A. Tianjin Teachers' College, Ed. M., Ph.D. State University of New York at Buffalo (SUNY)

Thompson, Carol(2006) Associate Professor
B.A., Wake Forest University; M.Ed., Duke University; Ph.D., University of Pennsylvania

Turner Johnson, Ane(2009) Professor
B.A., Hollins College; M.S., George Mason University; Ph.D., Virginia Tech

Walpole, MaryBeth(2000) Professor
B.A., Wells College; M.A., Stanford University; Ph.D., UCLA

Wang, Peng(2020) Lecturer
E.Eng., Beijing Forestry University School of Landscape Architecture; M.S., Ph.D., University of Rochester Warner School of Education

Williams, Barbara Bole(2001) Professor
B.A., Muskingum College; M.A., M.A., Glassboro State College; Ph.D., Temple University

Wilson-Hill, Zalphia(2014) Lecturer
B.A., Temple University; M.A., Glassboro State College; EdD, Rowan University

Wright-Mair, Raquel(2019) Assistant Professor
B.A., Ithaca College; M.S., Florida International University; PhD, University of Denver

Department of Electrical and Computer Engineering

Bouaynaya, Nidhal(2013) Professor
B.S. Ecole Nationale Superieure de l'Electronique et de ses Applications; M.S., Ph.D. University of Illinois at Chicago

Chakraborty, Dwaipayan(2020) Assistant Professor
B.S. Maulana Abul Kalam University of Technology, India; Ph.D. University of Central Florida

Chin, Steven(1997) Professor
B.S., Rutgers University; M.S., The Johns Hopkins University; Ph.D., Rutgers University

Ditzler, Gregory(2022) Associate Professor
B.S., Pennsylvania College of Technology, M.S. Rowan University, Ph.D. Drexel University

Li, Jie(2019) Associate Professor
B.S., Xi'an Jiaotong University; M.S., Xi'an Jiaotong University; Ph.D., Illinois Institute of Technology

Polikar, Robi(2001) Professor and Department Head
B.S., Istanbul Technical University; M.S., Ph.D., Iowa State University

Ramachandran, Ravi Prakash(1997) Professor
B.Eng., Concordia University; M.Eng., Ph.D., McGill University

Schmalzel, John L.(1995) Professor
B.S., M.S., Ph.D., Kansas State University

Tang, Ying (Gina)(2002) Professor
B.S., M.S., Northeastern University, China; Ph.D., New Jersey Institute of Technology

Trafford, Russell(2020) Lecturer
B.S., M.S., Rowan University

Wu, Ben(2016) Assistant Professor
B.S., Nankai University; Ph.D., Princeton University

Zhang, Hua(2022) Assistant Professor
B.S., M.S., Ph.D., Northwestern Polytechnical University, Xi'an, China

Department of English

Carrasquillo, Marci(2011) Associate Professor
B.A., University of Connecticut; M.A., Ph.D., University of Oregon

Coulombe, Joseph L.(2001) Professor
B.A., University of St. Thomas; M.A., Ph.D., University of Delaware

Crowley, Dustin(2015) Associate Professor
BA, Graceland University; MA, PHD, University of Kansas

Falck, Claire(2013) Associate Professor
B.A., Bowdoin College; M.A., Ph.D., University of Wisconsin, Madison

Freind, William(2005) Professor
A.B., College of the Holy Cross; M.A., Syracuse University; Ph.D., University of Washington

Hammond, Yvonne(2018) Lecturer
B.A., University of Saint Mary; M.A., University of Montana; Ph.D., West Virginia University

Hyde, Emily(2015) Associate Professor
BA, Yale University; MA, PHD, Princeton University

Lomuto, Sierra(2020) Assistant Professor
B.A. and M.A., Mills College; Ph.D. University of Pennsylvania

Meadowsong, Zena(2010) Associate Professor
B.A., Princeton University; M.A., Ph.D., Stanford University

Plourde, Bruce(2013) Instructor
B.A., Davidson College; M.A., Wake Forest University; Ph.D., Temple University

Slater, Katharine(2014) Associate Professor
B.A., Sonoma State University; M.A., Ph.D., University of California, San Diego

Smith, Marquita(2019) Assistant Professor
B.A., Rutgers; M.A., Rutgers; Ph.D., McMaster University

Solomon, Christina(2018) Lecturer
B.A., University of Wisconsin, Madison; M.A., Ph.D., University of Connecticut, Storrs

Talley, Lee(2002) Professor
B.A., Cornell University; M.A., Ph.D., Princeton University

Wilcoxson Catherine W.(1992) Associate Professor
B.A., Chatham College; M.A., Ph.D., University of Virginia

Willian, Claude(2022) Assistant Professor
B.A., Oxford University; MSt Oxford University; Ph.D. Stanford University

Department of Environmental Science

Ariyarathna, Thivanka(2022) Assistant Professor
B.S., University of Peradeniya; M.S., Ph.D., University of Connecticut

Christensen, Beth A(2018) Professor/Department Chair
B.S. Geological Sciences, Cook College, Rutgers University; M.S. Geological Sciences, Rutgers University; Ph.D., University of South Carolina

Crumrine, Patrick(2006) Associate Professor
B.S., Plattsburgh State University; Ph.D., University of Kentucky

Duran, Daniel(2018) Assistant Professor
B.S., Stockton University; M.S., University of Missouri; Ph.D., Vanderbilt University

Garner, Andra(2019) Assistant Professor
B.S., Grove City College; M.S., Penn State; Ph.D., Penn State

Kipp, Lauren(2020) Assistant Professor
B.S., University of NC, Wilmington; PhD Massachusetts Institute of Technology- Woods Hole Oceanographic Institution Joint Program in Oceanography

Moore, Eli K.(2018) Assistant Professor
B.S. Oregon State University; Ph.D. University of Maryland

Schutte, Charles(2019) Assistant Professor
B.S., Univ. of North Carolina; Ph.D., University of Georgia

Department of ExEEd

Barillas, Mary(2017) Senior Lecturer
B.S. Lafayette College; M.S. University of Pittsburgh, Ph.D, University of Pittsburgh

Bodnar, Cheryl(2015) Associate Professor
Ph.D. University of Calgary

Cruz, Juan(2019) Assistant Professor
B.S., Pontificia Universidad Javeriana; M. Ed., Pontificia Universidad Javeriana; Ph.D., Virginia Tech

DiPaolo, Brian(2019) Lecturer
B.S., M.S., Drexel University; Ph.D., University of Pennsylvania

Farrell, Stephanie(1998) Professor/Department Head
B.S., University of Pennsylvania; M.S., Stevens Institute of Technology; Ph.D., New Jersey Institute of Technology

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Zuponcic, Veda(1971) Professor
B.M., M.M., Indiana University

Department of Nursing

Becker, Patricia R(2018) Assistant Professor
RN, Chestnut Hill Hospital School of Nursing; BSN, LaSalle University; MS, Arizona State University; Ph.D., Weidner University

Kaspar, Matthew(2014) Senior Lecturer
BS Ohio State University, MA University of Phoenix, BSN, MSN Thomas Jefferson University, DNP Walden University

McDonald,Carmen(2018) Senior Lecturer
BA, Rowan University, MSN, MHA University of Phoenix, PhD, Walden University

Mordecai, Melissa(2016) Lecturer
BSN, Rampo College of NJ., MSN, Rutgers University, DNP Wilmington University

Santucci, Mary Ellen(2015) Associate Professor
B.S., St. Joseph's University; B.S.N., M.S.N., Thomas Jefferson University; Ph.D., Widener University

White, Robert(2016) Assistant Professor
B.S.N., M.S.N., The College of New Jersey; D.N.P., Rutgers University

Department of Philosophy and World Religions

Bauer, Nathan(2014) Assistant Professor
B.A., Univ. of Calgary; BA, McGill Univ.; Ph.D., University of Chicago

Boodman, Eva(2019) Assistant Professor
B.A., McGill; M.A., M Phil, Catholic University of Leuven; Ph.D., Stony Brook University

Cox, Whitney(2018) Lecturer
B.A., Amherst College; M.Div., Drew University; Ph.D., Temple University

Kazarian, Edward(2018) Lecturer
B.A., Trinity College; M.A., Ph.D., Villanova University

Lund, Matthew(2004) Associate Professor
B.S., University of Minnesota; M.A.,Ph.D., University of Illinois at Chicago

Miller, Ellen M.(2001) Associate Professor
B.A., Rutgers University; M.A., Ph.D., York University

Wang, Youru(2000) Professor
B.A., Fudan University, China; Ph.D., Temple University

Weinfeld, David(2022) Assistant Professor
B.A., Harvard University; Ph.D., New York University

Witonsky, Abraham(2018) Lecturer
B.A., University of Pennsylvania; M.A., Ph.D., Temple University

Department of Physics and Astronomy

Chimenti, Robert() Visiting Professor

Dobbins, Tabbetha A(2011) Professor
B.S., Lincoln University; M.S., University of Pennsylvania; Ph.D. Pennsylvania State University

Flores, Eduardo(1988) Associate Professor
B.S., New York Polytechnic; M.S., Ph.D., University of Michigan

Guerra, Erick J.(1998) Associate Professor
B.S., University of California, Berkeley; M.A., Ph.D., Princeton University

Guess, Carol(2018) Senior Lecturer
B.S. Hope College; M.S., Ph.D. Michigan State Univeristy

Hettinger, Jeffrey D.(1995) Professor
B.A., Mansfield University; M.A., Ph.D., Boston University

Hu, Xiao(2012) Professor
B.S., Nanjing University; M.S., Ph.D., Tufts University

Klassen, David R.(1998) Professor
B.S., University of Minnesota; Ph.D., University of Wyoming

La Porta, Philip(2014) Instructor
B.A., Muhlenberg College, M.S., Ph.D., Lehigh University

Lim, Michael Jay Young(2003) Professor
A.B., Harvard College; Ph.D., University of Michigan

Ling, Hong(1992) Professor
B.S., Jiaxin Teacher's College; M.S., Xian Institute of Optics and Fine Mechanics; Ph.D., Drexel University

Lofland, Samuel E.(1998) Professor
B.S., M.S., Ph.D., University of Maryland

Nucci, Nathaniel(2014) Associate Professor
B.S., M.S., University of New Hampshire; Ph.D., University of Pennsylvania

Smith, Trevor(2014) Associate Professor
B.S., M.S.T., Ph.D., University of Maine

Whiting, Nicholas(2017) Assistant Professor
B.S., Ph.D., Southern Illinois University

Department of Political Science and Economics

Banko, Lauren(2019) Lecturer
M.A. Temple University, B.A. Pace University

Butler, R. Lawrence(2001) Professor
B.A., Washington and Lee University; M.A., George Mason University; M.A. George Washington University; Ph. D., Princeton University

Gooch, Andrew(2020) Assistant Professor
Ph.D. & M.A. Political Science, University of California, Master of Public Administration, University of Pennsylvania; B.A. Economics & B.S. Public Administration and Policy

Gougon, Danielle(2013) Instructor
Ph.D. Rutgers University; M.A. New School University; B.A. Bloomsburg University

Javian, Katherine(2019) Lecturer
Ph.D., M.A. Temple University; B.A. History and Political Science, University of Massachusetts-Amherst

Jha, Stuti(2015) Associate Professor
B.A. University Delhi; M.S. University of Wisconsin, Milwaukee, Ph.D. Purdue University

Kapri, Kul(2016) Associate Professor
M.Sc. Tribhuvan University; M.S. Western Illinois University; Ph.D. Syracuse University

Li, Yupeng(2017) Assistant Professor
PhD Stonybrook

Markowitz, Lawrence(2009) Professor
B.A., State University of New York; M.A., The American University; Ph.D. University of Wisconsin

Melvin, Jesse(2019) Lecturer
Ph.D., M.A., B.A. University of Delaware

Pluta, Anne(2015) Associate Professor
B.A. Loyola Maryland; M.A. West Chester University; Ph.D. University of California, Santa Barbara

Reaves, Natalie D.(1998) Associate Professor
B.S., Rutgers University; M.S., University of North Carolina; Ph.D., Wayne State University

Somdahl-Sands, Katrinka(2009) Associate Professor
B.A., University of Minnesota; M.A., Ph.D., University of Texas

Department of Psychology

Abrams, Lisa(2014) Assistant Professor
B.S., College of Mount Saint Vincent; Ph.D., City University of New York

Angelone, Bonnie(2004) Professor
B.A., University of Tulsa; M.A., Ph.D., Kent State University

Angelone, David(2005) Professor
B.A., California State University at Sacramento; M.A., Ph.D., Kent State University

Arigo, Danielle(2018) Assistant Professor
B.S., Drexel University; M.S., Ph.D., Syracuse University

Bogart, Daniel(2019) Lecturer
B.A., Washington University in St. Louis; Ph.D., University of California, Irvine

Brunwasser, Steven(2019) Assistant Professor
B.A., University of Pennsylvania; M.S., University of Michigan; Ph.D., University of Michigan

Davis-LaMastro, Valerie(1989) Assistant Professor
B.S., Douglass College, Rutgers University; M.S., Villanova University; Ph.D., University of Delaware

Dihoff, Roberta(1987) Professor
B.A., Rutgers University; M.S., Ph.D., University of Wisconsin at Madison

Dinzeo, Tom(2008) Associate Professor
B.A., University of Minnesota; M.A., Ph.D. Kent State University

Diorio, Sarah(2019) Lecturer
B.A., Saint Bonaventure University; M.A., The Pennsylvania State University; Psy.D., Immaculata University

Fife, Dustin(2016) Associate Professor
B.S., Brigham Young University; M.S., Ph.D., University of Oklahoma

Gotham, Katherine(2019) Assistant Professor
B.A., University of Michigan; Ph.D., University of Michigan

Greeson, Jeffrey(2016) Associate Professor
B.A., Swarthmore College; M.S., Thomas Jefferson University; Ph.D., University of Miami

Haugh, Jim(2001) Associate Professor
B.A., Baldwin-Wallace College; M.S., Ph.D., Saint Louis University

Jones, Meredith(2014) Associate Professor
B.A., Brown University; M.A., Ph.D., University of Denver

Lassiter, Jonathan(2020) Assistant Professor
B.S., Georgia College and State University, M.A., Ph.D., California School of Professional Psychology

Martinez, Brittany(2018) Lecturer
B.Sc., Geneva College; Ph.D., The Pennsylvania State University College of Medicine

McElwee, Rory(2003) Professor
B.A., Drew University; Ph.D., Cornell University

Raiff, Bethany(2012) Professor
B.A., University of Wisconsin at Eau Claire; M.S., Ph.D., University of Florida

Simmons, Christina(2017) Assistant Professor
B.A., Syracuse University; M.A., Ph.D., University of Georgia

Sledjeski, Eve(2013) Assistant Professor
B.S., Mary Washington College; M.A., Kent State University; Ph.D., Kent State University

Soreth, Michelle (2006) Associate Professor
B.A., Rollins College; Ph.D., Temple University

Swan, Benjamin(2018) Lecturer
B.S., Kansas State University; M.A., Ph.D., New Mexico State University

Tappe, Karyn(2019) Lecturer
B.A., Haverford College; M.S., Penn State University; Ph.D., Drexel University

Tremoulet, Patrice (Polly)(2017) Assistant Professor
B.S.E., Princeton University; M.S., Stanford University; M.S., Ph.D., Rutgers University

Yingst, James(2019) Lecturer
B.A., Temple University; M.A., The University of Toledo

Yurak, Tricia(1998) Associate Professor
B.S., Northern Kentucky University; M.S., Ph.D., Ohio University

Department of Public Relations and Advertising

Audio, Regina(2018) Lecturer
B.A. and MA Rowan University

Basso, Joseph(2003) Professor
B.A., M.A., Glassboro State College; Ph.D., Texas A & M University; J.D., Widener University; APR

Bowman, Susan(2002) Professor
B.F.A., San Francisco Art Institute; M.F.A., Rutgers University, Mason Gross School of the Arts, M.P.S. Pratt Institute

FitzGerald, Suzanne Sparks(1994) Professor
B.A., Eastern University; M.S., Drexel University; Ph.D., Temple University; APR Fellow PRSA

Hong, Celine Seoyeon(2018) Associate Professor
B.A. Hanyang University, MA Michigan State University, PH.D. University of Missouri

Johnson, Kristine(2013) Associate Professor
B.S. University of Texas, MS, Texas Christian, Ph.D., Florida State University

Kim, Bokyung(2012) Associate Professor
B.A. Handong Global University, MA, Michigan State University, Ph.D., University of Missouri

Lee, So Young(2020) Assistant Professor
Ph.D, University of Texeas, Austin

Nia-Schoenstein, Asi(2013) Instructor
B.A., Clark University; M.S., Boston University; APR

Novak, Alison(2015) Assistant Professor
B.A. Marist College, Ph.D. Drexel University

Richmond, Julie(2018) Assistant Professor
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Rodolico, Louis(2018) Lecturer
B.S. Drexel University, MA Temple University

Vilceanu, Olga(2011) Associate Professor
B.A., M.A., Bucharest University; Ph.D., Temple University

Department of Radio, Television and Film

Akass, Jon(2020) Lecturer
B.A., Polytechnic of Wales; M.A., University of the Arts, London

Akass, Kim(2019) Professor
MA - University of Westminster

Almon, Amanda(2014) Associate Professor
B.F.A. Medical Illustration, Rochester Institute of Technology; M.F.A Biomedical Visualization, University of Michigan Ann Arbor; C.M.I.

Bianculli, David(2009) Professor
B.S., M.A., University of Florida

Bierman, Joseph(1988) Associate Professor
B.A., Rowan University; M.F.A., New York University; Ph.D., Regent University

Biesen, Sheri Chinen(2001) Professor
B.A., M.A., University of Southern California; Ph.D., The University of Texas

Brand, Keith M.(2002) Professor
B.F.A., West Virginia University; M.Ed., Temple University

Gilbert, Robby(2020) Assistant Professor
B.F.A., School of Visual Arts, New York; M.Ed., Argosy University; M.F.A., Vermont College of Fine Arts

Isaacson, Nina K.(2019) Lecturer
B.A., St. John's College; M.F.A., Temple University

Jarret, Sara(2022) Lecturer
B.A., Arcadia University; M.F.A., Rochester Institute of Technology

Mason, Jonathan(2010) Associate Professor
B.A., University of Miami; M.F.A,. Columbia University

Montgomery, Colleen(2017) Assistant Professor
B.A., M.A., University of British Columbia; Ph.D. University of Texas

Monticone, Paul(2018) Assistant Professor
B.A., University of Toronto, Boston University; M.A., Concordia University; Ph.D., University of Texas,

Nicolae, Diana(2006) Professor
B.A., Bucharest University; M.F.A., University of North Carolina - Greensboro

Olshefski, Jonathan (2010) Professor
B.A., M.F.A., Temple University

Politz, Keir(2015) Associate Professor
B.A., College of Holy Cross; M.F.A., Columbia University

Thompson, Shari(2020) Lecturer
B.A., Georgetown University; M.F.A., Temple University

Winkler, Chris(2016) Associate Professor
B.A., Temple University; M.A, Syracuse University

Department of STEAM Education

Dixon, Cory E.(2020) Assistant Professor
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Department of Science, Technology, Engineering, Art and Mathematics

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B.S., Ed.D, West Chester University of Pennsylvania; M.A., University of Arizona

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B.S., M.S.T., Ph.D., University of Maine

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B.S., M.A., American University of Beirut; Ph.D., University of Illinois Urbana-Champaign

Beale-Tawfeeq, Angela K.(2018) Associate Professor
B.A., Howard University; M.S., Howard University; Ph.D, The Florida State University

Graziano, Jane E.(1999) Professor
B.S., University of Illinois; M.A., Rowan University; Ed.D, Teachers College, Columbia University

Kuo, Yu Chun(2015) Assistant Professor
B.S., M.S. National Taiwan University; Ph.D., Utah State University

Perry, Jill Ann(2001) Associate Professor/Department Chair
B.S., M.Ed., University of Florida; Ph.D., University of Central Florida

Wieman, Robert(2012) Associate Professor
B.A. Williams College; M.A. City University of New York; Ph.D. Univ. of Delaware

Department of Sociology and Anthropology

Abbott, James R.(1990) Professor
B.A., University of San Diego; M.A., Ph.D., University of Pennsylvania

Hill, Jane(2013) Instructor
B.A. University of Mississippi, M.A. University of Memphis (Anthropology), M.A. University of Memphis (Art History-Egyptology) Ph.D., University of Pennsylvania

Hundley, James(2020) Assistant Professor
B.A. University of Connecticut, M.A. Western Washington University, Ph.D. State University of New York at Binghamton

Joy, Sandra (2003) Professor
B.A., Christopher Newport University; M.S.W., Norfolk State University; M.A., Ph.D., Temple University

McCann, Sharon(2017) Lecturer
BA, Immaculata; M.S.S & M.L.S.P. Bryn Mawr College

Miller, DeMond S.(1997) Professor
B.A., Northeast Louisiana University; M.S., Ph.D., Mississippi State University

Rich, Jennifer(2014) Associate Professor
B.A., Muhlenberg College; M.S.Ed., Bank Street College of Education; Ed.D., Rutgers University

Rosado, Maria(1993) Professor
B.A., M.A., Ph.D., Rutgers University

Schug, Seran(2018) Lecturer
B.A., University of Pennsylvania; M.A.; PH.D. Hahnemann University Graduate School (Drexel University),

Shofstall, Grant(2020) Assistant Professor
B.A., M.A. Illinois State University, Ph.D., University of Illinois

Sommo, Anthony J.(1992) Assistant Professor
B.A., M.A., Ph.D., University of Connecticut; M.S.W., Syracuse University

Straub, Adam(2022) Assistant Professor
B.A., Millersville State University of Pennsylvania; M.S., Ph.D. Oklahoma State University

Sullivan, Nadine(2018) Lecturer
B.A., Stockton University; M.A., Ph.D. Temple University

Department of Survey Engineering Technology

Derby, Frank(2021) Professor
BSc, Ph.D., University of Flordia

Department of Theatre and Dance

Bazemore, Dawn Marie(2016) Associate Professor
B.F.A, SUNY Purchase; M.F.A. Hollins University

Durossette, Dirk(2017) Senior Lecturer
B.A. California State, M.F.A. Temple University

Elkins, Leslie A.(2004) Associate Professor
B.A., Columbia College; M.Ed., Ph. D., Temple University

Fusco, Thomas A.(1999) Associate Professor
B.A., University of Massachusetts; M.F.A., Boston University

Grace-Duff, Jamie L.(2018) Senior Lecturer
B.S Drexel, M.F.A Temple University

Hostetter, Anthony(2012) Assistant Professor
B.F.A., Virginia Commonwealth University; M.F.A. Penn State, Ph.D., University of Missouri

Hostetter, Elisabeth(2000) Professor
B.F.A., Virginia Commonwealth University; M.A., University of Texas; Ph.D., University of Missouri

Roche, Christopher(2014) Associate Professor
B.A. Catholic University; M.F.A. Ohio State University; Ph.D, Ohio State University

Savadove, Lane(2007) Professor
B.A., Haverford College; MFA, Columbia University

Stewart, Melanie(1981) Professor
B.A., Webster College; M.F.A., Temple University

Turner, Paule Lawrence(2000) Associate Professor
B.F.A., Virginia Commonwealth University; M.F.A., Temple University

Department of World Languages

Hernandez, Maria(2018) Assistant Professor
B.A.,M.A., Université de Provence; M.A. Middlesex University; Ph.D., Rutgers University

Madero, Roberto R.(2001) Associate Professor
Licence d'histoire, Paris VII; M.A., Ph.D., Princeton University

Manley, Marilyn S.(2004) Professor
B.A., Boston University; M.A., Ph.D., University of Pittsburgh

Mas Serna, Maria Esther(2013) Instructor
B.A., Rowan University; M.A. Universidad de Granada, Spain

Matsumura Dusk, Chie(2018) Lecturer
B.A., Tsuru University; M.A. Kansas State University

Mirra, Alessandra(2018) Lecturer
Laurea, Università degli Studi di Roma, La Sapienza; Doctorate, Università degli studi di Macerata; Ph.D. University of Pennsylvania

Mousa, Tarek(2018) Lecturer
B.A., Souhag University; M.A. LaSalle University

Santos Quinones, Lorena(2018) Lecturer
B.A., Rowan University; M.A., Temple University

Smith III, Edward C.(1992) Associate Professor
B.A., Rutgers University; M.Phil., Ph.D., New York University

Department of Writing Arts

Allison, Leslie(2018) Senior Lecturer
B.A., Auburn University; Ph.D., Temple University

Atwood, Megan(2017) Assistant Professor
B.A., University of Iowa, M.F.A., Hamline University

Block, Ronald(2003) Associate Professor
B.A., University of Nebraska; M.A., M.S., Syracuse University

Budris, Kathryn(2018) Senior Lecturer
B.A., Hope College; M.F.A., Roosevelt University

Cesare, Nicole(2018) Senior Lecturer
B.A., Eastern University; M.A., Villanova University; Ph.D., Temple University

Courtney, Jennifer(2004) Associate Professor
B.A., Duquesne University; M.A., Western Michigan; Ph.D., Purdue University

DeRewal, Tiffany(2018) Senior Lecturer
B.A., Messiah College; M.A., Villanova University; Ph.D., Temple University

Del Russo, Celeste(2015) Associate Professor
B.A., Wheaton College; M.A., University of New Orleans; M.Sc., University of Oxford; Ph.D., University of Arizona

Donaldson, Timothy(2018) Lecturer
B.A., Cedarville College; M.A., Villanova University; M.F.A., Fairfield University

Fera, Doreen(2018) Lecturer
B.A., Temple University; M.F.A., Rutgers University-Camden

Fillenwarth, Gracemarie(2016) Associate Professor
B.A., King's College; M.A. Virginia Tech; Ph.D., Purdue University

Flocco, Marie(2017) Lecturer
B.A., St. Joseph's University; M.A., Carnegie Mellon University

Han, Aiguo(1993) Associate Professor
B.A., Xian Foreign Language University; M.A., Ph.D., Indiana University of Pennsylvania

Harrell, Cherita(2019) Lecturer
B.A., Rowan University; M.F.A., Rutgers University

Haruch, Amanda(2019) Lecturer
B.A., Rowan University; M.A. University of Idaho

Herberg, Erin V.(2000) Assistant Professor
B.S., B.A., Western Carolina University; M.A., Ph.D., Georgia State University

Howell, Edward(2017) Lecturer
B.A., Eastern University; M.A. Villanova University; Ph.D., Temple University

Jahn-Clough, Lisa(2010) Associate Professor
B.A., Hampshire College, M.F.A. Emerson College

Kopp, Andrew(2009) Professor
B.A., University of South Florida; M.A., Ph.D., University of Arizona

Lafferty, Kristine(2018) Lecturer
B.A., Rowan University; M.A., Rowan University

Lanier, Heather(2019) Assistant Professor
B.A., University of Delaware; M.A., Johns Hopkins University; M.F.A., Ohio State University

Luther, Jason(2017) Assistant Professor
B.A., B.S., SUNY Fredonia, M.A. University of Nevada, Reno, Ph.D., Syracuse University

Mikulski, Keri(2018) Lecturer
B.A., Thomas Jefferson University; M.A., The College of New Jersey; M.F.A., Rutgers University-Camden

Miller, Jude(2018) Senior Lecturer
B.A., Rutgers University-Camden; M.A., Rutgers University-Camden

Partyka, Jaclyn(2019) Lecturer
B.A., Ursinis College; M.A., University of Massachusetts; Ph.D., Temple University

Rausch, Juliana(2019) Lecturer
B.A., Temple University; Ph.D, Temple University

Reed, Amy(2012) Associate Professor
B.A., B.S., The Ohio State University; M.A., University of Dayton; Ph.D., Virginia Tech University

Romano, Catherine(2019) Lecturer
B.A., Rowan University; M.A., Rowan University

Royek, Stephen(2018) Lecturer
B.A., Rowan University; M.A., Rowan University

Shapiro, Rachael(2015) Associate Professor
B.A., SUNY Plattsburgh; M.A., Washington State University; Ph.D., Syracuse University

Tole, Jennifer(2014) Assistant Professor
B.A., Ph.D., Temple University

Tweedie, Sanford M.(1994) Professor
B.A., University of Michigan; M.A., Eastern Michigan University; Ph.D., University of Wisconsin-Milwaukee

Woodworth, Amy(2011) Assistant Professor
B.A., New York University; M.A., Rutgers University at Newark; Ph.D., Temple University

School of Innovation and Entrepreneurship

Dominik, Michael T.(2018) Lecturer
B.S., Rutgers University; M.B.A., Rowan University; M.S., University of Pennsylvania; Ph.D., Eastern University

Santos, Susana C.(2018) Assistant Professor
B.S., Universidade de Lisboa; Ph.D., ISCTE-IUL Business School

Zane, Lee(2018) Associate Professor
BS Rowan University, PhD. Drexel University

Course Descriptions

ACC 03210: Principles of Accounting I 3 s.h.
This course includes accounting theory and practice in the analysis of business transactions and the recording of business data; complete accounting cycle; interpretation of financial data for sole proprietorships, partnerships, and corporations.

ACC 03211: Principles of Accounting II 3 s.h.
Prerequisites: ACC 03210
This course includes accounting theory and practice applied to corporations; budgeting and estimating; analysis and comparison of cost and financial data.

ACC 03405: Foundations of Accounting 3 s.h.
This course presents an overview of accounting as an information system useful for decision making. It provides students with an understanding of the basic concepts of financial and managerial accounting from the perspective of a future user of accounting information.

ACC 03500: Financial and Managerial Accounting 3 s.h.
This course takes a managerial approach with emphasis on decision making. It includes financial statement analysis and topics on determination of cost behavior using regression analysis and learning curves, activity-based costing, cost allocation, performance measurement, and the decision making process.

ACC 03502: Advanced Managerial Accounting 3 s.h.
Prerequisites: ACC 03500
This course explores advanced managerial accounting topics, beyond the introductory topics covered in ACC 03500 – Managerial Accounting, pertaining to the three basic managerial activities – planning, controlling and decision making. Several of these topics are further explored through case study analysis and discussion. The course also utilizes data analytics tools to better prepare students for challenges they face in the professional world.

ACC 03503: Corporate and Partnership Taxes 3 s.h.
This course presents an overview of the Federal Tax System relating to various business forms including corporations, partnerships and exempt entities. Students will examine major tax legislation and judicial precedents with a focus on current and pending legislation. Topics will include corporate organization, accumulations and liquidation, partnership formation, S corporations, exempt organizations, estate and gift taxation, including trusts. Research and preparation software will be used throughout the course.

ACC 03504: Seminar in Auditing 3 s.h.
Students will develop an understanding of the judgmental issues faced in providing audit and assurance services. Further emphasis will be on the application of underlying accounting concepts to solve these judgmental issues. In addition, an emphasis will be on the auditor's decision-making process and the nature and amount of evidence the auditor should accumulate given engagement circumstances.

ACC 03505: Seminar in Business Law 3 s.h.
In this course, students study the legal aspects of sales, liability, secured transactions, commercial paper and consumer credit. In addition, the course will emphasize legal analysis and research.

ACC 03506: Advanced Domestic & International Accounting 3 s.h.
This financial accounting course focuses on the accounting for corporate mergers and acquisitions, and the accounting and financial reporting requirements of corporations with both domestic and international subsidiaries. It includes coverage of international financial reporting comparability.

ACC 03507: Government and Not-For-Profit Accounting 3 s.h.
Prerequisites: ACC 03500
This financial accounting course focuses on the contemporary accounting issues of governmental and non-profit organizations. It includes financial reporting, budgeting, forecasting and strategic planning in the environments of local, state, and federal government, colleges and universities, hospitals, and voluntary health and welfare organizations.

ACC 03508: Seminar and Research In Accounting 3 s.h.
This seminar provides the opportunity for students to improve their professional research skills and advance their own scholarly development in the accounting field. Taken after five graduate accounting and busienss law courses, it provides a synthesis of prior learning. Students will work collaboratively with the professor and other enrolled students to develop and complete a major research project and other assignments. Topics may include financial, not-for-profit, managerial, auditing, or tax accounting.

ACC 03509: Intermediate Financial Accounting 3 s.h.
This course will include a review of the accounting process, the conceptual framework, the preparation of financial statements and specific principles related to the accounting for current assets, property, plant and equipment, liabilities, leases, income taxes, pensions, and shareholders' equity. Research and empirical evidence will be emphasized. This course is restricted to students who have not taken Intermediate Accounting I and II at the undergraduate level.

ACC 03510: Financial Statement Analysis 3 s.h.
This course will take an expanded study of financial statement analysis from the point of view of the primary users of financial statements: equity and credit analysts. The analysis and use of financial statements will also emphasize the properties of numbers derived from these statements, business and asset valuation, and the importance and use of the notes to the financial statements. Expanded data analytic skills will be emphasized.

ACC 03511: Introduction to Federal Taxation 3 s.h.
Prerequisite: Admission into MBA program or Admission into Certificate of Advanced Graduate Study in Accounting program.
This course provides an overview of Federal income tax concepts, including gross income, deductions, credits, gains and losses from dispositions of property, deferred and tax exempt transactions, assignment of income, tax accounting, and other special topics. Emphasis will be placed on interpreting the Internal Revenue Code and Regulations as well as case law. Students will be required to show evidence of scholarly research through a major writing assignment on an emerging tax issue.

ACC 03512: Advanced Accounting Information Systems and Business Process Controls 3 s.h.
This course is designed to give the MBA student an introduction to the important concepts related to accounting information systems, with emphasis on enterprise risk management. An overview of internal control frameworks is used to discuss pervasive, business process and application controls. A methodology for evaluating the risks and controls within a defined business process is demonstrated and applied across the major business processes. Students will gain hands-on experience with a leading Enterprise Resource Planning system and commercial computerized accounting software.

ACC 03513: Financial Accounting Problems and Practice 3 s.h.
This course provides an overview of accounting problems and concepts related to financial accounting and reporting. It focuses on areas present in the Business Analysis and Reporting (BAR) Discipline section of the Uniform CPA Examination including: (1) Accounting Research, (2) Financial Statements and Select Transactions of For-Profit Entities, (3) Cost Accounting, (4) Financial Statement Analysis and Advanced Data Analytics, and (5) Financial Statements and Select Transactions of Not-For-Profit Entities and State and Local Governments.

ACC 03514: Accounting Legal Liability and Professional Responsibility 3 s.h.
Prerequisite(s): MGT 98242
This course is a study of the legal liability of accountants and ethical concepts. It will cover the following areas: the ethical role of the professional accountant, professional codes of conduct, ethical decision making, legal and regulatory obligations, and corporate governance and ethical management.

ACC 03515: Forensic Accounting 3 s.h.
This course provides a broad overview of forensic accounting. It examines current issues of fraud, such as the nature of fraud, types of fraud, identification, detection, and prevention of fraud. The course provides students with exposure to case study, analytics and critical thinking in order to confirm the financial information is presented fairly.

ACC 03599: Special Topics in Accounting 3 s.h.
Prerquisite: ACC 03500 with minimum grade of C
Students will study advanced topics in Accounting. By design, the specific topical course content will change with time. Contact the Business Graduate Office or the Accounting & Finance Department for details.

FIN 04300: Principles of Finance 3 s.h.
Prerequisites: ACC 03211 (may be taken concurrently) and STAT 02260 minimum grade of C- and (MATH 03125 or MATH 01130 or MATH 01140 minimum grade of C-) and ECON 04101 and ECON 04102
This course includes the following topics: financial goals; depreciation, taxation and cashflows; financing the firm via short-term, intermediate, and long-term debt, and preferred and common stock; capital budgeting and leasing; dividend policy; and business growth and contraction.

FIN 04435: International Financial Management 3 s.h.
Prerequisites: FIN 04300 minimum grade of C
This course studies financial management in the international environment. Topics include foreign exchange risk management, multinational working capital management, international portfolio investment, foreign direct investment, capital budgeting for the multinational corporation, political risk, international financing and international financial markets.

FIN 04500: Financial Decision Making 3 s.h.
Pre-requisites: (ACC 03500 or ACC 03510) and MBA Foundation Courses
Students in this course will learn valuation techniques including adjusted present value, equity cash flows, and real-option valuation. In addition to comparing alternative valuation techniques and the assumptions and limitations underlying each, students will explore the technical difficulties and incentive effects caused by high leverage, the relation between capital structure and capital costs, the interaction between a firm's financial structure and its business strategies, the conditions contributing to potential under or over-valuation of a firm's prospects by the market, and the managerial consequences of such misvaluation.

FIN 04505: Advanced Financial Planning 3 s.h.
Prerequisite: Admissions to the MBA or MS in Finance program
Financial planning is the process of meeting life goals through the proper management of finances. Life goals can include buying a home, saving for your child's education or planning for retirement. Through sound financial planning individuals can make decisions that will produce their desired results. In this course, students will learn foundations of financial planning, managing basic assets, managing credit, managing insurance needs, managing investments and prepqring for retirement and estate planning.

FIN 04510: Independent Study: Finance 1 to 6 s.h.

FIN 04511: Quantitative Methods in Finance 3 s.h.
Prerequisite: Admission to MBA or MS in Finance program
The objective of this course is to teach students the fundamentals of quantitative finance. The topics covered in the course include asset returns and time value of money, probability and statistics in their applications to financial analysis, portfolio theory and asset pricing models, regression and econometrics for financial data analysis, structure and pricing of financial derivatives, risk quantification and management.

FIN 04512: Capital Budgeting 3 s.h.
Prerequisites: MBA Foundation Course requirements, contact MBA Office for details
This course includes the following topics: estimation of project cash flows, interest, annuity, and present value calculations, evaluation of projects under conditions of certainty and risk, strategic planning in capital budgeting, and leasing.

FIN 04516: Issues in Finance 3 s.h.
Prerequisites: FIN 04500
This course includes the following topics: mergers and acquisitions, financial structure analysis, cost of capital analysis, capital budgeting, portfolio management, financial institutions, money and capital markets, and international finance.

FIN 04518: Derivative Securities and Financial Risk Management 3 s.h.
Prerequisites: FIN 04600
In this course students will learn forward, future, option and swap contracts, and hedging, arbitrage, and derivatives-pricing models. In addition, securitization and risk management concepts will be covered. Students will learn how to model and evaluate derivative instruments and their applications to corporate strategy and risk management.

FIN 04520: Financial Modeling 3 s.h.
Prerequisite(s): FIN 04511 with minimum grade of C.
The objective of this course is to teach students the fundamentals and practice of building financial models by using Microsoft Excel. Students become familiar with the built-in-functions of Excel and learn how to use them in financial model building with a hands-on-approach. The topics covered in the course include financial statement modeling, cost of capital, capital budgeting modeling, leasing, valuation analysis, portfolio modeling, capital-asset pricing models, option-pricing models, real options modeling, bonds, and term structure modeling.

FIN 04530: Multinational Financial Management 3 s.h.
Prerequisite(s): FIN 04500 or Permission of Instructor and Admission to MBA or MS in Finance program
The objective of this course is to examine the managerial implications pertaining to the financial operations of the multinational firms of the investments in the international arena. The standard topics in international finance, such as exchange rate determination, foreign exchange risk (exposure), hedging techniques (using derivatives), international corporate valuation and capital budgeting, and sources of funds and the cost of capital in the international bond, stock, and money markets, are examined from a managerial point of view.

FIN 04540: Financial Institutions Management 3 s.h.
Prerequisites: Admissions to MBA or MS in Finance program or Permission of Instructor
In the course, students will learn about the many roles financial service-providers play in the economy today. Students will examine how and why the financial services marketplace as a whole is rapidly changing, becoming new and different as we move forward into the future. Students will also learn the techniques how to measure and manage various financial risks the modern financial institutions face in today's globally competitive financial environment, such as interest rate, market, credit, liquidity, off balance sheet, foreign exchange, sovereign, technology and other operational risks.

FIN 04560: Fixed Income Securities 3 s.h.
Pre-requisites: MSF Foundation Courses.
The objective of this course is to teach students the fundamentals of fixed income markets, covering different fixed income security types, and the mathematics of their evaluation and risk management. The topics covered in the course include fixed income security valuation, term structure of interest rates and the yield curve, fixed income risk quantification and management, securities with embedded options, credit derivatives, interest rate derivatives, and portfolio management.

FIN 04599: Special Topics in Finance 3 s.h.
Prerequisite: FIN 04500 with minimum grade of C or Graduate Student in a College of Business Major
Students will study advanced topics in Finance. By design, the specific topical course content will change with time. Contact the Business Graduate Office or the Accounting & Finance Department for details.

FIN 04600: Investment Analysis and Portfolio Management 3 s.h.
Prerequisites: MSF Foundation Courses
In this course students will analyze and develop an ability to deal with the following topics: investment values and market price with regard to risk, return, portfolio diversification, taxes and inflation. Students will also examine the role of fixed income securities versus common stock prices, yields, returns and valuations, warrants, options and future contracts, U.S. and foreign securities markets, and the rapidly developing science of portfolio management as it applies to both the firm and the individual.

ARHS 03520: Art Since 1945 3 s.h.

ART 02523: Graduate Painting I 3 s.h.
Advanced graduate work in concepts, techniques and media appropriate to contemporary painting and individual expression.

ART 02524: Graduate Painting II 3 s.h.
Further advanced work in painting.

ART 02532: Graduate Printmaking I 3 s.h.
Advanced graduate work in concepts, techniques and media appropriate to contemporary printmaking and individual expression. Permission of the instructor is strongly advised.

ART 02533: Graduate Printmaking II 3 s.h.
Further advanced work in printmaking.

ART 02535: Advanced Graduate Problems In Art 2 to 6 s.h.
Extensive in-depth work at the third or fourth graduate course level in a studies, art education or art history area arranged with permission of the appropriate professor, the graduate advisor and department chairperson.

ART 02560: Independent Study-Art 3 to 6 s.h.

ART 09200: Theory and Analysis of Art Education 3 s.h.
This course provides students with an historical knowledge base of the theories, philosophies and persons that have impacted the teaching of art in public schools. Assignments will actively engage learners in developing their own teaching philosophies as they examine current theoretical and pedagogical research, and the national and state curriculum standards for teachers and students of the visual arts.

ART 09520: Jewelry I 3 s.h.
Emphasis is on original metal design and construction, involving techniques and processes in the designing, forming and finishing of utilitarian and decorative hand-wrought products.

ART 09521: Jewelry II 3 s.h.
Further advanced work. This course may not be offered annually.

ART 09529: CERAMICS I 3 s.h.

ART 09530: CERAMICS II 3 s.h.

SMED 31507: GRAD PROBS 3 s.h.

BINF 05555: Bioinformatics: Advanced Biological Applications 3 s.h.
This course in bioinformatics covers the application of modern computational and functional genomics methods to current questions in biological and biomedical sciences. Bioinformatics approaches and philosophy will be highlighted through exploration of research problems in cell and developmental biology, and ecology. Collaborative learning and problem solving using computational, statistical and genomics methods will be emphasized. Students will design and carry out collaborative research projects.

BINF 05560: Advanced Programming for Molecular Biology 3 s.h.
This Graduate level lecture course is designed for 1st & 2nd year students in the Masters in Bioinformatics Program. Students will learn the programming skills necessary to be competent in writing programming to analyze primary research data. Specifically, students will expand on their understanding of basic unix command line programming and further develop fluency in programming languages, including Python and R (specifically analytics not visualization). This course will involve considerable practical application, and students will learn to analyze data critically, design experiments, collect and interpret data, create graphs and figures, and present their results in oral presentations.

BINF 07500: Bioinformatics Seminar 3 s.h.
Prerequisites: CHEM 07595 and BIOL 05555 and CS 07595
This advanced literature survey course in bioinformatics covers current and emerging topics in the field of Bioinformatics through the analysis of current primary literature. The multidisciplinary nature of bioinformatics will be highlighted through examples of computational approaches to solving biological, biochemical, and applied biomedical research problems. Emphasis is placed on the interplay between computational methods and how they are applied to solve real problems in biology and biochemistry. Students will engage in semester-long research projects culminating in a presentation of a topic from the primary literature.

BINF 07501: MS Thesis Research 1 3 s.h.
Prerequisites: Matriculation into M.S. Bioinformatics
This is the first semester of research in Bioinformatics for students pursuing a MS degree with thesis. Thesis project outline and thesis committee must be selected and approved PRIOR to the start of this course.

BINF 07502: MS Thesis Research 2 3 s.h.
Prerequisite: BINF 07501
This is the second semester of research in Bioinformatics for students pursuing a MS degree with thesis. Thesis project outline and thesis committee must be selected and approved PRIOR to the start of this course. This course is an extension of the project undertaken as part of MS Thesis Research 1 (BINF 07501)

BINF 07503: MS Thesis Research 3 3 s.h.
Prerequisites: BINF 07502
This is the third semester of research in Bioinformatics for students pursuing a MS degree with thesis. Thesis project outline and thesis committee must be selected and approved PRIOR to the start of this course. This course is an extension of the project undertaken as part of MS Thesis Research 2 (BINF 07502)

BINF 07504: MS Thesis Research 4 3 s.h.
Prerequisite(s): BINF 07503 and permission of the Instructor
This is the fourth semester of research in Bioinformatics for students pursuing a MS degree with thesis. Thesis project outline and thesis committee must be selected and approved PRIOR to the start of this course. This course is an extension of the project undertaken in MS Thesis Research 3 (BINF 07503).

BINF 07505: M.S. Thesis Research 5 3 s.h.
Prerequisite: BINF 07504
This is the fifth course in a series of in Bioinformatics Thesis research courses for students pursuing a MS degree with thesis. Thesis project outline and thesis committee must be selected and approved PRIOR to the start of this course. This course is an extension of the project undertaken in MS Thesis Research 4 (BINF 07504).

BINF 07510: Bioinformatics 3 s.h.
This Graduate level survey course in bioinformatics covers the application of modern computational methods to the fundamentals of molecular biology (protein and DNA structure, transcription and translation). The multidisciplinary nature of bioinformatics will be highlighted through examples of computational approaches to solving biological, biochemical, and applied biomedical research problems. Emphasis is placed on the interplay between computational methods and how they are applied to solve problems in biology and biochemistry.

BINF 07595: Bioinformatics: Advanced Biochemical Applications 3 s.h.
Prerequisite: CHEM 07548
This introductory course in bioinformatics covers the application of modern computational methods to the fundamentals of molecular biology (protein and DNA structure, transcription and translation). The biochemical tools of molecular biology will be discussed. Methods of aligning DNA sequences will be studied in relation to mutations, phylogenic tree analysis, forensic science, and genetic diseases. Algorithms for protein structure prediction, microarray technology and gene expression will be explored. Computer based lab exercises will support the topics presented. Students will be required to do a literature based research project.

BIOL 01100: Biology I 4 s.h.
This course studies the chemical properties of protoplasm; cell structure and cell division; metabolic processes in organisms, including photosynthesis and respiration; principles of genetics including Mendelian laws; evolution and ecological relationships of organisms.

BIOL 01104: Introduction to Evolution and Scientific Inquiry 4 s.h.
Prerequisite(s): MATH 01100 to 01499 or STAT 02100 to 02499 or MATH 03100 to 03499 with min of grade of D- or S02 min score 550 or S12 min score 570 or A02 min score 24 or ALG min score 77 or CLM/CLMR min score 40
This laboratory course is designed for freshman Biology majors and is the first of a four-course introductory sequence. This course introduces students to organismal diversity and its evolutionary origins, covers the fundamental concepts of evolutionary theory, and surveys many of the ways that organisms have become adapted to their environments. In addition, students in this course will learn some of the basic skills necessary for scientific inquiry, including the scientific method, critical thinking, experimental design, and the gathering, analysis, and presentation of quantitative data. Credit will not be given for both Introduction to Evolution and Scientific Inquiry (BIOL 01104) and Biology I (BIOL 01100). Priority for enrollment will be given to students declared as Biology majors, Biology minors, Bioinformatics majors, Computer Science majors, Biochemistry majors, Environmental Studies majors, Environmental Studies minors, or Pre-Medical concentration.

BIOL 01106: Introduction to Genetics 4 s.h.
Prerequisite(s): BIOL 01104 with C- or better and CHEM 06100 with minimum Grade of D-
This course is designed for first year biology majors and builds on skills and knowledge gained by the students from Introduction to Evolution and Scientific Inquiry. The course focuses on the study of genetic factors in bacteria, viruses, higher plants and animals. The principles of Mendelian, molecular and population genetics will be introduced. Discussion of genetic applications in agriculture, biotechnology, and medicine will be an integral part of the course. The laboratory projects will provide the students with the opportunity to gain hands-on experience with the most common classical and molecular genetics methods. Credit will not be given for both Introduction to Genetics (BIOL 01106) and Biology II (BIOL 01101).

BIOL 01113: General Biology: Human Focus 4 s.h.
This one-semester laboratory course provides an introduction to the basic concepts of the biological sciences, including, but not limited to, cell biology, the body plan and organ systems of vertebrate animals, genetics and heredity, and vertebrate evolution. Emphasis will be placed on how these topics relate to the human organism. Laboratory exercises enable the student to visualize many of the concepts discussed in class. No credit toward biology major.

BIOL 01202: Biological Skills for Transfer Students 4 s.h.
Prerequisites: BIOL 01100 and BIOL 01101
This laboratory course is designed for students transferring into the Biology major after having completed Biology I and Biology II at another institution. This course will review key topics covered in Introduction to Evolution and Scientific Inquiry, Introduction to Genetics, and Introduction to Cell Biology (BIOL 01104, BIOL 01106, and BIOL 01203) while introducing students to a variety of scientific skills covered in those courses. Examples of skills include critical thinking, experimental design, reading of primary literature, data collection, analysis, and interpretation, and oral and written scientific presentations. Credit will not be given for both Introduction to Cell Biology (BIOL 01203) and Biological Skills for Transfer Students (BIOL 01202).

BIOL 01203: Introduction to Cell Biology 4 s.h.
Prerequisites: BIOL 01106 with C- or better
This laboratory course introduces students to the fundamentals of cell biology, including the cellular basis of life, cell evolution, cellular organization, cell metabolism, cell diversity, cell-cell communication, intracellular signaling and the cellular basis of disease.

BIOL 01599: INDEP STUDY 1 to 3 s.h.

BIOL 10210: Human Anatomy and Physiology I 4 s.h.
This course offers a molecular, cellular and systematic approach to the structure and function of the component units and organizational systems of humans. Emphasis is placed on cells, tissues, membrane physiology and the skeletal, muscular and nervous systems.

BIOL 10212: Human Anatomy and Physiology II 4 s.h.
This laboratory course focuses on the gross and microscopic structure of the body. The course is the second semester of a two-semester sequence that covers all of the functional systems of the human organism. In this course, the systems of the body to be studied in detail include the endocrine, cardiovascular, respiratory, excretory, digestive, and reproductive systems. Whole body metabolism and fluid balance will also be studied.

BIOL 11330: Microbiology 4 s.h.
Prerequisite(s): BIOL 01203 or MCB 01102 or BIOL 01211 with C- or better
This course deals with the morphology and physiology of unicellular organisms, with emphasis upon bacteria. It studies culture methods, growth parameters, isolation, identification and characterization, and metabolism of microorganisms in the laboratory.

BIOL 14440: Introduction to Biochemistry - Lecture Only 3 s.h.
Prerequisite(s): (BIOL 01203 or MCB 01102 or BIOL 01211 or BIOL 01202 with C- or better) and CHEM 07201 with D- or better
This course investigates chemical compounds and chemical reactions which are of paramount importance to the functioning of biological systems. It also examines the major metabolic pathways for energy production and biosynthesis.

BIOL 14540: Introduction to Biochemistry I 3 s.h.
Prerequisite(s): (BIOL 01203 or MCB 01102 or BIOL 01211 or BIOL 01202 with C- or better) and CHEM 07201 with D- or better
This course is concerned with the chemical compounds and chemical reactions which are of paramount importance to the functioning of biological systems. The major metabolic pathways for energy production and biosynthesis are examined. The requirements include a research paper or individual project. Admission to the course is at the discretion of the Graduate Advisor. This course may not be offered annually.

BIOL 22335: Advanced Genetics 4 s.h.
Prerequisite(s): BIOL 01203 or MCB 01102 or BIOL 01211 or BIOL 01202 with C- or better
The course will provide an in-depth background in all areas of Mendelian, molecular, population and evolutionary genetics. The students will learn how to use genetic tools in dissecting complex biological pathways, developmental processes and regulatory systems. Discussion of landmark genetic experiments will constitute the basis of an inquiry-based approach that will delineate the dynamic nature of modern genetics. The laboratory exercises are designed to put special emphasis on molecular biology techniques and the use of bioinformatics.

BIOL 27503: Concepts of Comparative Embryology 4 s.h.
This graduate laboratory course focuses on the morphological and physiologic processes involved in embryogenesis of animals. The course includes the development of echinoderms, amphibians, birds, and mammals. Considerable emphasis will be placed on organogenesis and the development of organ systems.

MCB 01101: Foundations in Biology for Biomedical Sciences I 4 s.h.
This laboratory course is the first of the two semester sequence designed for students not majoring in Biology but interested in pursuing studies in biomedical areas through advanced Biology courses. This sequence serves as an introductions to fundamental biological concepts and the foundation for upper-level biology courses for such students. Both courses of the sequence focus on genetics, cell biology, and evolution and theory relation to human health. This course focuses more specifically on the molecular basis of variation and heredity and its evolutionary context.

MCB 01102: Foundations in Biology for Biomedical Sciences II 4 s.h.
Prerequisite(s): BIOL 01205 or MCB 01101
This laboratory course is the second of the two semester sequence designed for students not majoring in Biology but interested in pursuing studies in biomedical areas through advanced Biology courses. This sequence serves as an introduction to fundamental biological concepts and the foundation for upper-level biology courses for such students. Both courses of the sequence focus on genetics, cell biology, and evolution and their relation to human health. This course focuses on molecular and cellular mechanisms of life and their evolutionary context.

MCB 01360: Biophysics I 4 s.h.
Prerequisite(s): PHYS 00300 OR MCB 01102
This course is aimed at understanding the physics of biological systems. The goal of the course is to quantitatively define biological systems and their functions. Key emphasis will be placed on (1) understanding theories, laws, and axioms that govern systems and their behavior and (2) the use of physics to determine quantitative information about systems and their behaviors. For each topic, the basic laws of physics will be reviewed followed by their application to specific biomolecular or biological system examples. The laboratory component is aimed at giving students hands-on experience in measurement and observation for biological systems.

MCB 01506: Graduate Translational Cell Biology 3 s.h.
This graduate course focuses on advanced translational approaches of cellular processes towards analysis, diagnostics, and treatment of human diseases. Topics including biological causes of cellular and metabolic diseases, molecular diagnostics, gene therapy, and stem cell therapy will be addressed.

MCB 01507: Advanced Molecular Microbiology 4 s.h.
Advanced Molecular Microbiology course will address concepts that are essential for understanding of the molecular biology of microorganisms: environmental sensing and signal transduction pathways; regulation of gene expression: transcription, bacterial operons, and post-transcriptional regulatory mechanisms; bacterial cell division and its regulation, bacterial cell wall biosynthesis, mechanisms of adherence and invasion, molecular mechanisms of bacterial persistence and antibiotic resistance. This course provides students with opportunities to study advanced methods of genetic engineering: DNA cloning, the nature, selection and design of DNA cloning vectors, restriction enzymes, modifying enzymes, polymerases, bacterial transformation, Western blot, and other tools and techniques used in molecular biology. Some aspects of bioinformatics and genomics, as well as other advanced molecular technologies will be discussed. Overall this course will aid understanding of fundamental aspects of the molecular biology of microorganisms as they relate to biomedical sciences.

MCB 01508: Advanced Topics in Molecular & Cellular Biosciences 3 s.h.
This Graduate level lecture course is designed for graduate students in the Masters in Bioinformatics Program. Topics discussed will investigate areas (e.g. Epigenetics, Cancer Biology, Systems Biology) and/or innovative approaches to treating disease (e.g. Gene Editing, Immunotherapy, Precision Medicine). Students will be expected to perform literature reviews to determine the current status in the particular area of study. This course will involve review of current literature, critical reasoning and group discussion, as well as written and/or oral reports.

MCB 01514: Infectious Agents 3 s.h.
This course aims at preparing students for health professions and biomedical research by exploring host-pathogens interactions. Infectious agents among viruses, bacteria, parasites and/or fungi will be selected to examine life cycles, interaction with hosts and pathogenicity. Translational use of pathogens in disease prevention and therapies will also be explored. In this course, students will also develop research proposals on selected infectious agents.

MCB 01521: Graduate Cell Culture Techniques 4 s.h.
This graduate course features hands-on instruction in the techniques, methodologies, principles, and applications of mammalian cell culture. The students will learn principles of cell culture in monolayers and suspension as well as concepts of cell proliferation, viability, differentiation and tissue histology. Stem cell phenotypes and differentiation genetic marker profiles will be compared for adipogenesis, chondrogenesis, and osteogenesis.

MCB 01534: Advanced Medical Biochemistry 3 s.h.
This course is intended to introduce graduate students to fundamental biochemical principles relating to disease states. This will include structure and function of biomolecules, biochemical pathways in cells, and cellular processed relevant to diseases and medical disorders. Special emphasis will be placed on reviewing and evaluating peer-reviewed medical literature. Students in this course should have taken at least one previous course in biochemistry.

MCB 01538: Graduate Immunology 4 s.h.
This graduate course studies infection and resistance and the principles and types of immunity and hypersensitivity. Laboratory applications include: antigen-antibody formation, structure and reactivities.

MCB 01550: Graduate Molecular Genetics 4 s.h.
This graduate course considers the principal concepts in biochemical genetics including gene function and regulation, DNA replication, and mutation. Laboratories focus on fundamental biotechnology concepts and techniques.

MCB 22450: Molecular Genetics 4 s.h.
Prerequisite(s): BIOL 01203 or MCB 01102 or BIOL 0211 or BIOL 01202 with C- or better and at least least Junior status
This course considers the principal concepts in biochemical genetics including gene function and regulation, DNA replication, and mutation. Laboratories focus on fundamental biotechnology concepts and techniques.

MCB 22598: Human Genetics 4 s.h.
Patterns of transmission of single gene traits, human biochemical genetics, autosomal and sex-linked chromosomal anomalies, immunogenetics and blood groups, screening for genetic diseases and prenatal diagnosis. Lecture, laboratory sessions or the equivalent. This course may not be offered annually.

TBS 01570: Advanced Topics in Biomedical Instrumentation 3 s.h.
This course provides an in-depth examination of the types of instruments that students may encounter when conducting research in a pre-clinical or hospital setting. The class primarily focuses on instruments that are used in diagnostic and therapeutic applications of biomedical research ranging from small animals (e.g., mice) to humans. Some examples include ultrasound, x-ray, nuclear, and magnetic resonance imaging methods, as well as combined platforms and therapeutic approaches. Students will learn about the theory behind the instruments, their principle components and operations, and how they are used to positively affect human lives. The course utilizes primary scientific literature, and students will be expected to contribute towards a publishable review article on a given instrument or technique. The goal of the course is for students to develop a proficient knowledge of the diverse types of instrumentation that they will likely utilize in a career in translational and/or clinical biomedical research.

BME 11550: Advanced Biocompatibility and Immunoengineering 3 s.h.
This course covers advanced topics in biocompatibility and the body's response to foreign materials, with an emphasis on material properties and the cell and molecular biology of the immune system. The course explores the various signaling mechanisms used by cells when presented with foreign and engineered antigens, and then applies engineering principles to the discovery and design of novel biomaterials and therapeutics that are biocompatible. State of the art topics in current literature related to biocompatibility and immunoengineering will be explored.

BME 11551: Advanced Mechanobiology 3 s.h.
This course will provide students with a thorough understanding of how mechanics dictate cell function and how this knowledge can be applied to the prevention and treatment of disease. Students will learn how mammalian cells interact with the complex 3D environment that surrounds them in tissues including how cellular behavior is affected by the extracellular matrix. The course also addresses the specific cell response to mechanical stimuli and how this can be used in tissue engineering and regenerative medicine applications. Additional topics include: extracellular matrix structure and function, cell-matrix interactions and cell signaling, mechanics of the extracellular matrix, and mechanotransduction. State of the art topics in current literature related to mechanobiology will be explored.

BME 11552: Advanced Cell Bioelectricity 3 s.h.
The objective of this course is to develop quantitative and qualitative understanding of the generation and transmission of bioelectricity in and between excitable cells. Topics include: circuit analysis and modeling of potentials and currents across the cellular membrane, action potentials, propagation of potentials along the cellular membrane,and electrical stimulation of excitable tissue. State of the art topics in current literature related to cell bioelectricity will be explored.

BME 11553: Regulatory Strategies in Biomedical Engineering 3 s.h.
This course examines domestic and foreign regulatory practices associated with biomedical devices and/or products. It will cover the processes and protocols used by the FDA in order to better prepare students to be significant contributors to the development of a biomedical product that meets or exceeds all the applicable standards, regulations, and laws that apply to its applicable technology. Students will examine regulatory strategy for specific medical devices and products.

BME 11554: Advanced Stem Cell Engineering 3 s.h.
Prerequisite(s): Must have Graduate standing or fully executed Senior Privilege Paperwork
Although stem cells can differentiate into numerous cell types, their therapeutic potential is limited by the inability to reliably control stem cell behavior outside of the body. To increase the clinical use of stem cells, it is important to understand how stem cells interpret extracellular signals and to use this information to design materials that control stem cell behavior in vitro and in vivo. This course will cover stem cell biology, mechanobiology, and techniques to engineer materials with biochemical and biophysical signals that regulate stem cell growth and differentiation.

BME 11555: Fundamentals of Synthetic Biology 3 s.h.
Prerequisite(s): Must have Graduate standing or fully executed Senior Privilege Paperwork
Synthetic biology integrates many scientific disciplines with the goal to rapidly and reliably reprogram or design new biological systems. It has applications in a wide range of areas including manufacturing, biosensors, therapeutics, and even synthetic life. This course provides in-depth coverage of techniques and real-world applications of synthetic biology through analysis of current primary literature in the field. Topics include: cell free systems, biomanufacturing, CRISPR, plant syn bio, mammalian syn bio, therapeutic applications, safety mechanisms, and ethics.

BME 11556: Advanced Nanoparticle Design and Engineering 3 s.h.
Prerequisite(s): Must have Graduate standing or fully executed Senior Privilege Paperwork
This course will provide students with an introduction to the need for nanoparticle technologies for drug delivery to treat diseases and their benefits over freely delivered therapeutics. Students will learn how to apply engineering principles to the development and design of nanotechnology for drug delivery. This course also addresses how nanoparticle technologies interact with biological systems and how they can be targeted to specific tissues to maximize delivery and therapeutic efficiency. Additional topics include: disease applications, bioconjugation strategies, in vitro and in vivo experimental techniques to study drug delivery, nanoparticle characterization, nanoparticle synthesis, and the clinical implementation of nanoparticle technologies. The graduate level course will also include implementation of the course material via projects and presentations spanning project development thorough clinical translation.

BME 11561: Advanced Topics in Biomedical Instrumentation 3 s.h.
Prerequisite(s): Graduate student status or Instructor permission
This course provides an in-depth examination of the types of instruments that students may encounter when conducting research in a pre-clinical or hospital setting. The class primarily focuses on instruments that are used in diagnostic and therapeutic applications of biomedical research ranging from small animals (e.g., mice) to humans. Some examples include ultrasound, x-ray, nuclear, and magnetic resonance imaging methods, as well as combined platforms and therapeutic approaches. Students will learn about the theory behind the instruments, their principle components and operations, and how they are used to positively affect human lives. The course utilizes primary scientific literature, and students will be expected to contribute towards a publishable review article on a given instrument or technique. The goal of the course is for students to develop a proficient knowledge of the diverse types of instrumentation that they will likely utilize in a career in translational biomedical engineering and science research.

BME 11568: Advanced Phenomena in Biomaterials Science 3 s.h.
This course is aimed at applying material properties and technology to regulate and support biological systems and functions at the graduate level. A goal of the course is to fundamentally understand variable biomaterials and their interactions with biological systems, (cells, tissues, organs). A second goal is to use material properties and technology as a tool to understand biomaterials for artificial tissues and organs, or devices and sensors. Finally, students will learn and understand public healthcare policies, needs, and resources.

BME 11573: Biomaterials Engineering 3 s.h.
The goal of studying biomaterials is to understand how the body's natural tissues are organized on a compositional, structural, and properties basis. We also seek to understand how the body recognizes and responds to foreign materials, and to combine this knowledge in order to successfully design implants that can be used to treat debilitating diseases.

BME 11574: Advanced Topics in Controlled Release 3 s.h.
Prerequisite(s): Must have Graduate standing or fully executed Senior Privilege Paperwork
Controlled release systems are designed to provide delivery of an agent at a pre-determined rate for an extended period of item. Controlled release offers several advantages over traditional methods of formulation and administration: maintenance of effective concentrations for a sustained period, less total agent required, cost effectiveness, convenience and compliance. This course introduces students to engineering fundamentals applied to controlled release systems. Basic principles of materials, mass transfer, heat transfer, fluid flow and chemical reactions are used to analyze and design controlled release systems. Applications to pharmaceutical, agricultural, and food industries will be explored. Laboratory experiments and demonstrations will be integrated throughout the course.

BME 11590: Advanced Emerging Topics in Biomedical Engineering 1 to 4 s.h.
This course provides timely coverage of specific advanced topics in Biomedical Engineering, and it is intended for graduate students. Special topics courses may be traditional classroom-based courses as well as research-related courses supervised by specific advisors. This class may be taken multiple times when offered with a different special topics content.

BME 11600: Graduate Seminar in Biomedical Engineering Topics 0 to 1 s.h.
The students will study current research topics and skills relevant to Biomedical Engineering.

BME 11602: Writing and Winning Grant Proposals in the Biomedical Field 2 s.h.
The students will learn aspects of writing in the biomedical field related to academic and industry career topics with a focus on grant proposal preparation.

BME 11610: Special Topics for Doctoral Students in Biomedical Engineering 3 s.h.
The students will study advanced level topics in Biomedical Engineering.

BME 11611: Biological Transport Phenomena 3 s.h.
Biological Transport Phenomena concerns the integrated study of momentum, mass, and energy transfer and its application to characterize physiological and cellular processes. In this course, students will apply principles of fluid, mass, and heat transport to a broad range of problems related to biological systems and biomedical devices. At the end of the course students will apply these principles to present a biomedical solution related to their personal research and/or a clinically-relevant problem.

PMED 01210: Intro to Public Health 3 s.h.
Prerequisites: Admission to Advanced Premedical Studies Post-Baccalaureate Program at Cooper Medical School of Rowan University
PMED 01.210 Introduction to Public Health (3 Credits) {Pre-requisites: Admission to Advanced Premedical Studies Post-baccalaureate Program at Cooper Medical School of Rowan University) This course introduces many fields within the public health system, and the work in measuring health, disease and illness. It offers learners an understanding of population health through multiple disciplines like: epidemiology, biostatistics, environmental and occupational health, social and behavioral health, health policy and management. Students analyze contemporary public health issues such as threats to the nation's food industry, health promoting behaviors related to disease prevention, the burden and distribution of infectious diseases in our nation and globally, public health's role in disaster preparedness and management, and bioterrorism. Students explore the role of law and government (local, state, national, and international) in public health and challenging public health policy issues related to spiraling healthcare costs and addressing the aging population. Students examine environmental and occupational health issues and the impact of future challenges in public health. In many ways, the course will be critical to the student's career in medicine. A firm foundation in the basic science of health and disease processes will ensure that the student is able to apply these principles to their clinical performance as medical students and as practicing physicians. It will be a hybrid course with online lectures and the use of clinical case studies in an active learning environment.

PMED 01220: Applied Medical Ethics 3 s.h.
Prerequisite: Admission to Advanced Premedical Studies Post-Baccalaureate Program
This is the second humanities course in the postbaccalaureate program. This course provides an overview of current approaches to resolving ethical issues facing clinicians in private office and hospital practices and academic medical settings. This course will serve to enhance the professional development of premedical students as well as provide the academic framework needed for medical school preparation. This course will serve as a valuable resource for students interested in pursuing a career in biomedical sciences. This course is a hybrid course with online content enhanced through and the integration of case studies in active learning environment sessions.

PMED 01310: Medical Biochemistry, A Clinical Approach 3 s.h.
Prerequisite: Admission to Advanced Premedical Studies Post-Baccalaureate Program
PMED 01.310 Medical Biochemistry, a clinical approach (3 credits) {Prerequisites: Admission to Advanced Premedical Studies Post-Baccalaureate Program at Cooper Medical School of Rowan University) Course Description: Biochemistry is the study of the myriad of chemical processes that occur within living organisms. This course will introduce the major macromolecules of life, including nucleic acids, proteins, carbohydrates and lipids, as interacting partners that provide structure and function to cells. The course will provide the student with a rigorous foundation for application of metabolic principles to other course selections in the Post-Bac program and will be critical to the student's performance in the first and second years of medical school. A firm foundation in the basic science of health and disease processes at the biochemical level will ensure that the student is able to apply these principles to their clinical performance as medical students and as practicing physicians. It will be a hybrid course with online lectures and the use of clinical case studies in an active learning environment. Upon completion of the course, it is expected that students will understand the basic structure and function of the major cellular macromolecules and the processes in which they participate, as well as an understanding of the types of diseases that may develop when cellular chemical processes go awry.

PMED 01320: Cellular Basis of Molecular & Regenerative Medicine 3 s.h.
Prerequisites: PMED 01.310 and Admission to Advanced Premedical Studies Post-Baccalaureate Program
PMED 01.320 Cellular Basis of Molecular and Regenerative Medicine (3 Credits) {Pre-requisites: Medical Biochemistry, a clinical approach PMED 01.310 and Admission to Advanced Premedical Studies Post-Baccalaureate Program at Cooper Medical School of Rowan University) Course Description: This course involves the study of the individual eukaryotic cell and tissues and will begin with an introduction to cell theory. Topics that will be discussed are: the structure and functions of the plasma membrane, nucleus, mitochondria, lysosomes, endoplasmic reticulum and the golgi apparatus. The course will then progress to provide the student with a strong understanding of the fundamental concepts of regenerative medicine and stem cell biology and their potential to alter current medical treatment. It will be a hybrid course with online lectures and the use of clinical case studies in an active learning environment. The students will acquire a rigorous foundation for application of cell biology and physiology principles to other course selections in the Post-Bac program which will be critical to the student's performance in the first and second years of medical school. A firm foundation in the basic science of health and disease processes at the cellular level including regenerative medicine will ensure that the student is able to apply these principles to their clinical performance as medical students and as practicing physicians. This course will also serve as a valuable resource for students interested in pursuing a career in biomedical sciences. : Medical Biochemistry, a clinical approach PMED 01.310 and Admission to Advanced Premedical Studies Post-baccalaureate Program at Cooper Medical School of Rowan University) Course Description: This course involves the study of the individual eukaryotic cell and tissues and will begin with an introduction to cell theory. Topics that will be discussed are: the structure and functions of the plasma membrane, nucleus, mitochondria, lysosomes, endoplasmic reticulum and the golgi apparatus. The course will then progress to provide the student with a strong understanding of the fundamental concepts of regenerative medicine and stem cell biology and their potential to alter current medical treatment. It will be a hybrid course with online lectures and the use of clinical case studies in an active learning environment. The students will acquire a rigorous foundation for application of cell biology and physiology principles to other course selections in the Post-Bac program which will be critical to the student's performance in the first and second years of medical school. A firm foundation in the basic science of health and disease processes at the cellular level including regenerative medicine will ensure that the student is able to apply these principles to their clinical performance as medical students and as practicing physicians. This course will also serve as a valuable resource for students interested in pursuing a career in biomedical sciences.

PMED 01410: Medical Genetics 3 s.h.
Prerequisites: PMED 01.310Admission to Advanced Premedical Studies Post-Baccalaureate Program at Cooper Medical School of Rowan University
PMED 01.410. Medical Genetics (3 Credits) {Pre-requisites: Medical Biochemistry, a clinical approach PMED 01.310 and Admission to Advanced Premedical Studies Post-Baccalaureate Program at Cooper Medical School of Rowan University) Course Description: Over the last several years, there has been a massive increase in our understanding of the human genome and the implication of genetic changes as they relate to not only genetic disorders but also to cancer and even our responses to pharmacological agents. These advances have ushered in a new age of personalized medicine where it is no longer good enough to diagnose a patient's disorder, but it is now sometimes necessary to identify the nuances of a patient's genetic make-up using molecular diagnostic techniques in order to better tailor therapy. Because medical genetics and molecular diagnostics are quickly becoming an essential part of medical care in many medical fields, it is imperative that students who wish to pursue careers in the biomedical sciences also receive an adequate familiarity with these fields. This course is designed to provide an overview of human genetic concepts and clinical disorders that have a genetic component and will be a hybrid course with online lectures and the use of clinical case studies in an active learning environment. After completing this course, students will have an understanding of the general principles of human genetics and its relevance to modern clinical medicine.

PMED 01420: Human Physiology 3 s.h.
(Prerequisites: Medical Biochemistry, a clinical approach PMED 01.310 and Admission to Advanced Premedical Studies Post-Baccalaureate Program at Cooper Medical School of Rowan University
PMED 01.420 Human Physiology (3 Credits) (Prerequisites: Medical Biochemistry, a clinical approach PMED 01.310 and Admission to Advanced Premedical Studies Post-Baccalaureate Program at Cooper Medical School of Rowan University) This course will provide a comprehensive overview of human physiology at the molecular, cellular and systems levels. The curriculum will begin with studies of basic cell physiology and extend through complete organ systems. Topics will include basic membrane biology, muscle contraction, cardiovascular, respiratory, renal, gastrointestinal, endocrine, and peripheral nervous systems. The activities of these organ systems are highly integrated and coordinated activity is essential for maintaining a constant physiological environment. Homeostatic mechanisms that regulate these multi organs systems and compensate for perturbations of baseline physiology will be discussed. An important component of this curriculum will be to describe the physiology changes encountered in routine clinical medicine and disease states. Therapeutic treatment options for conditions will be discussed. This curriculum is designed to meet the needs of students interested in pursuing a career in medicine or the biomedical sciences.

PMED 01430: Medical Microbiology 3 s.h.
Prerequisites: Medical Biochemistry, a clinical approach PMED 01.310 and Admission to Advanced Premedical Studies Post-Bac Program at Cooper Medical School of Rowan University
PMED 01.430 Medical Microbiology (3 Credits) (Prerequisites: Medical Biochemistry, a clinical approach PMED 01.310 and Admission to Advanced Premedical Studies Post-Baccalaureate Program at Cooper Medical School of Rowan University) This course introduces basic concepts of general microbiology and host-microbe interactions. The course will begin with a discussion of the structure, metabolism, genetics, growth and control of bacteria and fungi; the structure and mechanisms of replication of bacteriophages and animal viruses; the mechanism of defenses of vertebrates against infectious diseases; the mechanism of transmission of microbes; the strategies for detection of microbes and viruses in clinical specimens; the mechanism of action of antibiotics and antiviral and current and experimental vaccines against infectious diseases. It will be a hybrid course with online lectures and it will use clinical case studies in an active learning environment to increase student's critical thinking skills in medical microbiology. Upon completion of this course the students will have a comprehensive overview and high level of understanding of the diversity of human pathogens, the different types of diagnosis available, their different mechanisms inducing pathogenesis, epidemiology and therapeutic and prevention strategies against infectious diseases.

PMED 01440: Mechanisms of Disease 3 s.h.
Prerequisites: Admission to the Advanced Premedical Studies Post-Baccalaureate Program and PMED 01310
PMED 01. 440. Mechanisms of Disease (3 Credits) {Prerequisites: Medical Biochemistry, a clinical approach PMED 01.310 and Admission to Advanced Premedical Studies Post-Baccalaureate Program at Cooper Medical School of Rowan University) Course Description: Pathology literally translated means the "study of suffering", but in commonplace usage refers to the study of diseases affecting the human body. As such, Mechanisms of Disease will be a natural continuation of previous courses and will focus on basic pathophysiologic processes that underlie human disease. The course will begin with a discussion of adaptive cellular responses to stress and progress to cell injury and cell death. Specific disease mechanisms or processes that will be considered include: tissue inflammatory and repair responses, immune dysfunction, neoplasia, developmental and genetic disorders, hemodynamic derangements, and environmental and nutritional pathology. The course will provide the student with an understanding of basic disease mechanisms that will enhance their performance in the first and second years of medical school. A firm foundation general Pathology is essential for medical students and practicing physicians. The course will utilize a hybrid model with online lectures and the use of clinical case studies in an active learning environment. Upon completion of the course, it is expected that students will have developed a foundation that can then be further advanced and applied to specific diseases involving the various organ system of the body

CHE 06502: Special Topics in Chemical Engineering 3 to 6 s.h.
This course presents chemical engineering topics related to recent developments in industrial practice or research. May be repeated.

CHE 06506: Process Heat Transfer 3 s.h.
Application of heat transfer to the process industries. Mechanisms of heat transfer; conduction, convection and radiation; Selection and design of heat exchanging equipment, e.g., double-pipe, shell and tube, plate and frame, extended fin heat exchangers. Design parameters for heat transfer with phase change.

CHE 06508: Membrane Process Technology 3 s.h.
Principles of membrane processes: reverse osmosis, ultrafiltration, microfiltration, electrodialysis, pervaporation, gas permeation, and their application to traditional and emerging fields. Membrane materials and structure. Mass transfer and design aspects for both liquid and gas separation systems.

CHE 06510: Biochemical Engineering 3 s.h.
The fundamentals and engineering of bioprocess engineering with emphasis on applying biotechnology to industrial processes. Essential aspects of biochemistry, microbiology and kinetics. Discussion of bioreactor engineering, and recovery and purification processes. Processing applications of engineering kinetics and enzyme technology. Laboratory experiments and demonstrations will be integrated throughout the course.

CHE 06512: Safety in the Process Industries 3 s.h.
This course presents the basic principles, guidelines, and calculations necessary for the safe design and operation of chemical plants and related manufacturing facilities. Topics include: toxics and human exposure, fires and explosions, vessel relief systems, hazard identification and risk assessment, source and dispersion models. Accident investigation is discussed along with a review of actual case histories.

CHE 06514: Transport Phenomena for Engineers 3 s.h.
This course will present the analogies among heat, mass, and momentum transfer. Governing differential equations and their uses in steady-state and unsteady-state systems will be described. Applications will be discussed for mass transfer coupled with heat transfer and/or chemical reaction. Numerical methods and computer applications will be integrated throughout the course.

CHE 06515: Advanced Reactor Design 3 s.h.
Overview of chemical reaction types and ideal reactors. Catalysis and catalytic reactors; analogies for real reactors; fluid flow and heat and mass transfer effects on chemical reactions and reactor design; numerical analyses and simulation of reacting systems; applications in the chemical industry.

CHE 06516: Advanced Separation Process Technology 3 s.h.
This course describes advanced separation processes such as: crystallization and precipitation; adsorption, chromatography and ion exchange; reverse osmosis, ultrafiltration, gas permeation and pervaporation. Commercial system design parameters and laboratory demonstrations will be included. An overview of other novel separation processes will be done.

CHE 06518: Polymer Engineering 3 s.h.
This course provides an introduction to the various aspects of polymer engineering starting with basic polymer properties, structure and function. The major topics covered are the formation of polymer systems and manufacturing techniques. Fabrication processes topics include coating, extrusion and foams. The production of thin-films and membranes will focus on stretching, phase inversion, and hollow fiber spinning. Students will study application of polymeric materials engineering to various industries.

CHE 06520: Green Engineering Design in the Chemical Industry 3 s.h.
This course evaluates process design techniques to minimize waste and by-products in the processing and manufacturing industries. Topics include: mass and heat recycling processes; technologies for process steam renovation, material reuse and recycling methods. Case studies of industrial applications are utilized.

CHE 06528: Fluid Flow Applications in Processing and Manufacturing 3 s.h.
This course will cover the foundation principles of applied fluid mechanics with an emphasis on industrial applications. Topics in mixing, multi-phase fluid flow and processing, and fluidization will be covered. Key technologies from chemical, civil, and mechanical engineering applications will be used to illustrate concepts. The course will provide a strong background in the application of fluid mechanics principles to industrial processing and manufacturing operations.

CHE 06530: Experimental Methods in Chemical Engineering 3 s.h.
Prerequisite(s): Graduate Standing & Approval of Graduate Advisor
Hands-on experience with experimental techniques and computer aided methods for materials characterization and solutions to contemporary research problems in Chemical Engineering as well as in a variety of other engineering disciplines. Modular course including experimentations such as, but not limited to, TGA, DSC, DMA, and Rheology and computer-aided software packages such as ASPEN, GAMS, COMSOL, MATLAB and ImageJ.

CHE 06568: Electrochemical Engineering 3 s.h.
This course will focus on the fundamental principles of process electrochemistry. Basic principles of thermodynamics, kinetics and mass transfer as applied to electrochemical systems will be presented. Modeling of electrochemical systems and application of electrochemical principles to corroding systems will be conducted by the students. Engineering case studies of commercial applications in energy conversion and storage and electrolytic processes will be presented.

CHE 06570: Air Pollution Control 3 s.h.
This course introduces students to air pollution control theory. Students design air pollution control processes and specify equipment related to the control of particulate, gaseous, and toxic air emissions. The chemistry required for pollution control process design is presented. The environmental impacts due both to controlling and not controlling emissions are considered. Students design control equipment, specify and troubleshoot control systems and predict the impacts for each major type of control system.

CHE 06571: Biomedical Control Systems 3 s.h.
Prerequisite(s): Graduate standing and approval of Graduate Advisor
This course is an extension of Process Dynamics and Control focusing on the identification and study of biomedical control systems. Students will learn to identify components of physiological control systems and examine the origin of diseases at a systems level. Additional topics include the incorporation of artificial organs into existing physiological control systems, mathematical modeling of biological processes, designing therapeutic strategies, and integrating the results of primary literature into quantitative explanations of diseases.

CHE 06572: Biomedical Process Engineering 3 s.h.
This course introduces students to applications of chemical engineering fundamentals to biomedical systems. Students analyze and design biomedical processes. The basic biochemistry and physiology required for understanding of biomedical systems are presented. Advanced principles of mass transfer, heat transfer, fluid flow and chemical reaction are used to analyze or design drug delivery systems, pharmacokinetic models, the circulatory system, transport across cell membranes, and human and artificial organs. Laboratory experiments and demonstrations will be integrated throughout the course.

CHE 06573: Biomaterials Engineering 3 s.h.
The goal of studying biomaterials is to understand how the body's natural tissues are organized on a compositional, structural, and properties basis. We also seek to understand how the body recognizes and responds to foreign materials, and combine this knowledge in order to successfully design implants that can be used to treat debilitating diseases. The graduate level course emphasizes research literature, including landmark papers and emerging topics, and also includes additional advanced topics in biomaterial design.

CHE 06574: Advances in Particle Technology 3 s.h.
This course introduces students to application of chemical engineering fundamentals in the particle processing industry. Processes involving particles are an important part of the chemical process industry. These processes range from fluidized catalytic cracking of oils to coating processes in the pharmaceutical industry. Students will use advanced principles in fluid flow, heat and mass transport, and kinetics to analyze and design particle manufacturing processes and chemical industry processes involving particles. Novel processes will also be discussed and analyzed.

CHE 06575: Biopharmaceutical and Industrial Fluid Mixing 3 s.h.
Prerequisite(s): Graduate standing and approval of Graduate Advisor
Students in this course will demonstrate the importance mixing of both in biotechnology and the pahrmaceutical industries. The design project in this class will include a product that requires multiple process steps involving multiple phases and complex liquids and chemical reactions. Students will apply single and multi-phase fluid dynamics to the design of an industrial process that includes equipment design. A major objective of the class is to develop equipment designs for the biotechnology and pharmaceutical industry.

CHE 06576: Bioseparation Processes 3 s.h.
This course will focus on the fundamental principles of bioseparation processes. The characteristics of bioseparations will be presented as applied to downstream processing in the pharmaceutical/biotechnology and related industries. Theory and design of filtration, microfiltration, centrifugation, cell disruption, extraction, adsorption, chromatography, precipitation, ultrafiltration, crystallization, and drying will be presented as applied to biosystems. Commercial design considerations, such as sanitary design/sterilization, water quality, solvent recovery, waste disposal and biosafety, will be reviewed.

CHE 06577: Advanced Engineering Process Analysis and Experimental Design 3 s.h.
This course exposes students to advanced engineering applications of process analysis and experimental design. The course includes a multidisciplinary approach with theoretical background to support the course applications. Students will use advanced statistical and optimization techniques for process analysis and experimental design, process monitoring and quality control presently used in industry. The analysis and experimental design techniques presented in this course serve to optimize complex industrially relevant processes and make engineering design and calculations more effective. Applications from a wide range of industries will be presented including pharmaceutical, food, bulk and specialty chemicals, and petroleum industry applications.

CHE 06578: Tissue Engineering 3 s.h.
Prerequisite(s): Graduate standing and approval of Graduate Advisor
Tissue engineering is an expanding field that integrates principles of biology and engineering for the development of tissue substitutes and artificial organs. This course, which utilizes a combined lecture-laboratory approach, will review embryology, cell culture techniques, stem cell biology, cell signaling, cell development and differentiation, biocompatibility, tissue organization and function, biomaterial synthesis/characterization, and structure-function relationships in tissue engineering scaffolds.

CHE 06579: Industrial Process Pathways 3 s.h.
This course will study chemical reaction mechanisms that play crucial roles in the chemical industry. Fundamentals of reaction thermochemistry and reaction kinetics will be discussed. Students will learn to construct mechanistic models of complex, multi-reaction systems, and to apply these models to the solution of practical problems such as yield optimization.

CHE 06580: Optimization of Engineering Projects 3 s.h.
This course will overview strategies for planning and directing long-term engineering projects. Topics will include project organization, project scheduling, allocation of resources, project optimization and financial analyses.

CHE 06581: Advanced Process Analysis 3 s.h.
This course will examine advanced topics in process analysis including: process consistency, identification of optimal process based on economic analysis, process documentation including flowsheets and budgets, replacement analysis for processing equipment, and rationing limited resources between competing projects.

CHE 06582: Food Engineering Systems 3 s.h.
This course introduces students to the application of fundamental and advanced chemical engineering fundamentals applied to food processing systems. Students analyze and design food engineering processes. The basic and advanced chemistry and biochemistry required for an in-depth understanding of food systems is presented. Basic principles of mass transfer, heat transfer, fluid flow, chemical reaction, process control, and mixing are used to analyze or design food production systems. Computer simulations will be used for the design of food processing systems. Laboratory experiments and demonstrations will be integrated throughout the course.

CHE 06584: Controlled Release Theory, Technology And Applications 3 s.h.
Controlled release systems are designed to provide delivery of an agent at a pre-determined rate for an extended period of time. Controlled release offers several advantages over traditional methods of formulation and administration: maintenance of effective concentrations for a sustained period, less total agent required, cost effectiveness, convenience and compliance. This course investigates controlled release technologies through the application of chemical engineering principles. Knowledge of materials, mass transfer, heat transfer, fluid flow and chemical reactions are used to analyze and design controlled release systems. Applications to pharmaceutical, agricultural, and food industries will be explored. Laboratory experiments and demonstrations will be integrated throughout the course. A project will focus on the development of an original design and fabrication for a controlled release application.

CHE 06585: Engineering Quality Control 3 s.h.
This course exposes students to the state of the art process and product control techniques. This course includes a strong foundation in the fundamentals of engineering quality control and its relevance to process optimization. Students will learn the theory and practical applications of control charting techniques used in industry. Process capability analysis, controller design and control systems architecture will also be included. Students will also be exposed to experimental design and process optimization techniques. The relevance of engineering process control in the safety and profitability of processes and products will be emphasized. Concepts introduced throughout the course will be illustrated with practical examples from a wide range of industries.

CHE 06586: Advanced Engineering Thermodynamics. 3 s.h.
Prerequisites: Graduate standing and approval of Graduate Advisor.
Applications of classical and molecular thermodynamics to industrial problems in chemical and phase equilibrium. Topics include nonidea solutions, high pressure systems, complex reaction equilibria, generalized correlations, and equations of state.

CHE 06587: Process Optimization 3 s.h.
Prerequisites: Graduate Standing and approval of Graduate Advisor
In chemical and biochemical processes, optimization is essential to determine appropriate design and operating conditions. These systems have wide-range of complexities and requires multiple modeling methods and solution algorithms. Thus, topics studied will include, linear optimization, nonlinear optimization (convex and nonconvex), discrete optimization, heuristic optimization, uncertainty characterization, stochastic optimization, optimal control and multi-objective optimization. Will include computer lab sessions to demonstrate case studies in GAMS and Matlab.

CHE 06588: Advanced Process Control Automation and Design 3 s.h.
Manufacturing facilities in the Process Industries are highly automated to meet modern efficiency, quality, safety, and environmental goals. Students will learn to design batch and continuous processes capable of automated startup, operation and shutdown. Quality, safety, and environmental goals will translate to discrete and continuous constraints in automated process design. Students will learn to document process control and automation in Piping and Instrumentation Diagrams and Functional Specifications. The challenges of operator interaction with automated systems will be featured. Students will apply the concepts learned to a major term design project.

CHE 06640: Engineering Process Analysis 3 s.h.
This course focuses on engineering processes and introduces students to the commonalities among processes and manufacturing platforms. Students will learn analysis techniques relevant to engineering process data and to assess data quality, compare different types of engineering data, and develop process data models. In addition, students will be introduced to time series analysis and multivariate analysis methods.

CHE 06641: Engineering Statistical Process Control 3 s.h.
Prerequisite(s): CHE 06640
This course will introduce students to the industrial tools for engineering process monitoring for safety, quality and profitability. Students will be able to design, construct and implement control charts for a wide range of applications and make decisions regarding the safety, quality and profitability associated with engineering processes. In addition, students will learn the tools to assess process stability and capability. Examples from a variety of engineering processes covering a wide range of engineering applications will be used.

CHE 06642: Quality Control Methods and Metrics 3 s.h.
Prerequisites: CHE 06641 and CHE 06640 or equivalent
This course will introduce students to industrial quality control methods and the most current techniques for process and product continuous improvement. Students will learn how to quantitatively assess quality and design and implement a quality audit. They will use the engineering statistical tools acquired in pre-requisite courses and learn additional techniques to analyze process quality measures. In addition, students will learn inspection, test and measurement methodologies and acceptance sampling techniques. Examples from a variety of engineering processes covering a wide range of engineering applications will be used.

CHEM 05500: Teaching Pedagogy in Chemistry Instruction 3 s.h.
This graduate level course focuses on pedagogy as it applies to teaching in a general chemistry and organic chemistry lab. Topics covered in this course will include various pedagogical approaches and strategies for teaching both lab concepts and technical skills for general and organic chemistry.

CHEM 05501: Princ of Chemistry 3 s.h.

CHEM 05530: Special Topics in Chemistry 3 s.h.
Selected topics in individual areas of chemistry (analytical, organic, inorganic or physical). Consent of the instructor is necessary. Prerequisites are determined by the nature of the topic. The requirements of this course include a graduate laboratory project and/or research paper. This course may not be offered annually.

CHEM 05544: Intro to Research 3 s.h.

CHEM 05550: Advanced Seminar 1 s.h.
Oral presentation of scientific studies and data at the graduate level. The talks are accompanied by 35 mm slides prepared by the student. Attendance at South Jersey American Chemical Society meetings is required. This course may not be offered annually.

CHEM 06100: Chemistry I 4 s.h.
Prerequisite(s): Passing grade on Chemistry Placement Exam or C- or better in CHEM 05100
This course presents the basic principles involved in the study of chemistry. It emphasizes modern theories and laws used in the understanding of the structures and reactions of the elements and compounds and also includes gas laws, stoichiometry, and solution theory.

CHEM 06101: Chemistry II (Lecture And Lab) 4 s.h.
Prerequisites: CHEM 06100 or CHEM 06105
This course is a continuation of CHEM06.100. It covers these topics: equilibria, including acids and bases, complexes, and sparingly soluble compounds, thermodynamics, kinetics, electrochemistry, and solution theory. Descriptive inorganic chemistry is also covered.

CHEM 06400: Advanced Inorganic Chemistry Lecture 3 s.h.
Prerequisite: CHEM 06301
This course covers concepts and models of inorganic chemistry. It encompasses molecular geometries and other physical and chemical properties on the basis of the several chemical bonding theories and with reference to the periodic table. Students study the chemistry of both main group and d-block transition elements.

CHEM 06401: Advanced Inorganic Chemistry Laboratory 2 s.h.
Prerequisite: CHEM 06400 with concurrency allowed.
This course covers concepts and models of inorganic chemistry in the laboratory setting. Students study both main group and transition element chemistries. The laboratory component emphasizes the synthesis and characterization of inorganic compounds.

CHEM 06500: Modern Inorganic Chemistry 3 s.h.
This course covers concepts and models of inorganic chemistry. It encompasses molecular geometries and other physical and chemical properties on the basis of the several chemical-bonding theories and with reference to the periodic table. Students study the chemistry of both main group and d-block transition elements.

CHEM 06501: Modern Inorganic Chemistry Laboratory 2 s.h.
This course covers concepts and models of inorganic chemistry in the laboratory setting. Students study both main group and transition element chemistries. The laboratory component emphasizes the synthesis and characterization of inorganic compounds.

CHEM 07200: Organic Chemistry I (Lecture And Lab) 4 s.h.
Prerequisites: CHEM 06101 or CHEM 06106
This course studies the chemistry of carbon compounds and their properties, structures and reactions. It emphasizes the study of the principle classes of aliphatic and aromatic compounds, which in conjunction with selected experiments, gives an understanding of the mechanisms of organic reactions. Required for science majors.

CHEM 07201: Organic Chemistry II (Lecture And Lab) 4 s.h.
Prerequisites: CHEM 07200
This course is a continuation of CHEM07.200. Required for science majors.

CHEM 07348: Biochemistry (Lecture And Lab) 4 s.h.
Prerequisites: (CHEM 07201 OR CHEM 07202 OR CHEM 07203) AND (MCB 01102 OR BIOL 01202 OR BIOL 01203)
This course deals with chemical compounds and reactions important to the functioning of biological systems and includes a discussion of the metabolic pathways for energy production and biosynthesis.

CHEM 07512: Antibiotics 3 s.h.
Prerequisite: Matriculation in MS Pharmaceutical Sciences o Permission of Instructor
Antibiotics are broadly defined as agents that arrest or kill bacteria and serve a central role in modern medicine. Chemical compounds that exhibit antibiotic activity are wide ranging in chemical composition and biochemical mechanism of action. This course will provide an overview of this important class of biologically active molecules.

CHEM 07531: Special Topics in Biochemistry 3 s.h.
This course covers special topics in individual areas of biochemistry. Specific prerequisites are determined by the nature of the course when it is announced.

CHEM 07548: Biochemistry 4 s.h.
This course is concerned about Chemical compounds and chemical reactions which are of paramount importance to the functioning of biochemical systems. The major metabolic pathways for energy production and biosynthesis are examined. Laboratory experiments reinforce and expand the lecture material. The requirements of this course include a graduate laboratory project and/or research paper. Admission to the course will be at the discretion of the Graduate Advisor. This course is taught in the Chemistry and Biochemistry Department.

CHEM 07557: Chemical Biology 3 s.h.
The goal of this course is to describe how chemistry is applied to biochemical and biological systems to answer specific questions. It examines the use of small, synthetic molecules that are used as probes of biochemical function as well as how to design experiments using these molecules. The course also encompasses the use of purely synthetic compounds as functional or structural mimics of biological molecules. The methods and techniques used to measure designed interactions will also be discussed.

CHEM 07558: Advanced Biochemistry 4 s.h.
Prerequisites: Matriculation into MS Pharmaceutical Sciences or COGS in Industrial Chemistry or Permission of Instructor
This course provides an in-depth study of the principles involved in biological processes. It emphasizes the significance of biochemical reactions and regulations as well as mechanisms. A thorough elucidation of structure, function and mechanism will be presented. The overall strategy of living systems will be illustrated. Laboratory experiments will provide exposure to representative procedures and some important modern techniques. Students are encouraged to design their own molecular biology experiments using the facilities provided. A term project is incorporated into this course. Students are required to conduct an in-depth review of the literature regarding a topic.

CHEM 07560: Advanced Biochemistry Lecture 3 s.h.
This lecture course deals with complex biochemical processes involving the interaction of numerous classes of biomolecules. Specifically the course focuses on the interplay of proteins, lipids, carbohydrates, and nucleic acids in the cellular response and adaptation to the environment, both locally in the cell and of the organism as a whole. The course relies on both traditional descriptions of biochemical processes and the inclusion of primary literature sources to analyze experimental data, explain methodology, and introduce cutting edge concepts.

CHEM 07561: Advanced Biochemistry Laboratory 2 s.h.
Prerequisite: CHEM 07560 (may be taken concurrently)
This laboratory course deals with isolation and characterization of molecules from biochemical systems. The fundamentals and applications of chromatographic, electrophoretic, and spectroscopy techniques applied to biological molecules are taught through laboratory projects.

CHEM 07564: Advanced Organic Synthesis 3 s.h.
Prerequisite: Matriculation into MS Pharmaceutical Sciences or COGS in Industrial Chemistry or Permission of the Instructor
This course will provide and in-depth overview of several synthetically useful chemical methodologies, reagents, and reactions that are essential in synthesis of organic pharmaceuticals. Some of the general categories of reactions to be discussed in this course include reduction, oxidation, protecting groups, and carbon-carbon bond forming reactions. This course will survey a broad and diverse range of enantioselective, diastereoselective, chemoselective, and/or regioselective chemical transformations critical for the preparation of medicinal compounds. This course would suit the needs of graduate and senior undergraduate students who intend to pursue careers in the field of pharmaceutical sciences.

CHEM 07565: Organic Reactions And Mechanisms 3 s.h.
An advanced presentation of the major classes of organic chemical reactions, with the major emphasis being placed upon the detailed mechanisms of such reactions. Modern organic theory is included. The requirements of this course include a research paper or individual project. Admission to the course will be at the discretion of the graduate adviser. This course may not be offered annually.

CHEM 07567: Advanced Organic Preparations (Lecture & Lab) 3 s.h.
This is a laboratory course that provides an in-depth study of the procedures and key organic transformations that can be applied to the pharmaceutical and fine chemical industry. Major topics of discussion include the preparation of densely functionalized organic compounds that are used as pharmaceutical scaffolds.

CHEM 07568: Medicinal Chemistry 3 s.h.
This course describes various topics related to the biochemical principles and metabolic pathways with particular emphasis on pharmaceutical applications and biotechnology. This course will focus on the molecular mechanisms of drug action and chemical basis for drug therapy. Current methods used to study medicinal chemistry including recombinant DNA, combinatorial chemistry and bioinformatics, will be reviewed. A 3-D molecular modeling of drug targets and drug design will be integrated throughout the course. Clinical trials of drug case study are included. A term project is incorporated into this course. Students are required to conduct an in-depth review of the literature regarding a topic.

CHEM 07570: Organic Spectroscopy 3 s.h.
This is a laboratory course with class discussion on the separation and identification of organic compounds. Both classical and instrumental techniques are used in compound structure determination. Lecture emphasis is placed on interpreting IR, NMR, and mass spectra. The requirements of this course include a graduate laboratory project and/or research paper. Admission to the course will be at the discretion of the graduate adviser. This course may not be offered annually.

CHEM 07572: Advanced Organometallic Chemistry 3 s.h.
Prerequisite: Matriculation into MS Pharmaceutical Sciences or COGS in Industrial Chemistry or Permission of the Instructor
This course covers the chemistry of organometallic compounds and their applications in organic synthesis, and pharmaceutical industry. Some of the topics discussed in this course include the study of physical and chemical properties, characterization, analysis, and preparation of organometallic compounds, along with advanced organometallic reaction mechanisms such as substitution, addition, elimination, and insertion, etc. The course is designed for pharmaceutical sciences students and includes submission of a written report on original research literature in organometallic chemistry.

CHEM 07575: Polymer Chemistry 3 s.h.
This course presents a comprehensive overview of polymer chemistry. The subject matter, by its nature, crosses multiple specializations within the field of chemistry. The structure, properties and synthesis of polymeric materials are covered in accordance with the recommendations of the joint polymer education committee of the American Chemical Society.

CHEM 07588: Advanced Natural Products Chemistry 3 s.h.
This course is an introduction to the various aspects of chemistry that contribute to the extraction, isolation, analysis, and biochemical effects of natural products. This course will focus on pharmaceutical, biotechnological, and medicinal applications of these molecules with a special emphasis on cannabinoids.

CHEM 07590: General Aspects of Pharmacology 3 s.h.
Prerequisite: Matriculation into MS Pharmaceutical Sciences or COGS in Industrial Chemistry or Permission of the Instructor
This course attempts to provide an understanding of the basic principles and mechanism in pharmacology. Some of the topics discussed include pharmacodynamics and pharmacokinetics of drugs, and their interactions with the living tissues. It also provides a fundamental knowledge about the mechanism of action, structure-activity relationships, and interaction of therapeutics with physiological system and metabolism of drugs.

CHEM 07592: Advanced Pharmaceutical Chemistry 3 s.h.
Prerequisite: Matriculation into MS Pharmaceutical Sciences or COGS in Industrial Chemistry or Permission of the Instructor
This course covers the structure, properties, preparation, and analysis of organic and inorganic pharmaceutical drugs. Some of the topics that will be discussed include pharmacognosy, organic and inorganic pharmaceuticals, solubility characteristics and properties of these compounds under biological conditions, etc. The course is designed for pharmaceutical sciences students and includes submissions of a written report on original research literature in pharmaceutical chemistry.

CHEM 07593: Regulatory Affairs 3 s.h.
Prerequisite: Matriculation in MS Pharmaceutical Sciences or COGS in Industrial Chemistry or Permission of Instructor
This course will provide an overview of the regulations associated with the commercial development of pharmaceutical drugs or medical devices. The course would be useful for students in MS Pharmaceutical Sciences and COGS in Industrial Chemistry.

CHEM 07594: Good Laboratory Practice (GLP)/Good Manufacturing Practice (GMP) Techniques 3 s.h.

CHEM 08400: Physical Chemistry I (Lecture) 3 s.h.
Prerequisite(s): (CHEM 07201 or CHEM 07202) and (MATH 01131 or MATH 01141) and (PHYS 02201 or PHYS 00222 or PHYS 02203 or PHYS 00211 or CHE 06302 or CHEM 07203)
This course deals with the problems of the fundamental principles underlying physical chemistry. It gives major emphasis to thermodynamics, kinetics and quantum mechanics. It also includes spectroscopy, group theory and statistical mechanics. MATH 01230 recommended.

CHEM 08401: Physical Chemistry II (Lecture) 3 s.h.
Prerequisite: CHEM 08400
This is a continuation of CHEM 08400.

CHEM 08505: Advanced Biophysical Chemistry 3 s.h.
Prerequisite: Matriculation into MS Pharmaceutical Sciences or COGS in Industrial Chemistry or Permission of the Instructor
This is a graduate-level Biophysical Chemistry cousre, which focuses on applications of physical chemistry concepts and methods to biological systems. Topics cover the basic concepts of thermodynamics, reactions kinetics and spectroscopyk, etc. Additionally, various specific biophysical chemistry topics and experimental techniques are to be discussed. The course will equip students with a strong theoretical background to understand advanced topics covered in other courses. Students will be additionally required to complete an independent literature report as directed by the instructor.

CHEM 08510: Advanced Survey of Molecular Modeling Methods 3 s.h.
Prerequisite: Matriculation into MS Pharmaceutical Sciences or COGS in Industrial Chemistry or Permission of the Instructor
This survey course emphasizes the applications of molecular modeling theory and simulations in chemistry and biochemistry. The course will present to students a broad and in-depth knowledge of different modeling concepts and methodologies, and provide students opportunities to apply modern computational software to investigate molecular structures, chemical reactions, and biomolecular processes such as enzyme catalysis and protein conformational changes, etc. The topics will include quantum chemistry calculations, molecular mechanics, molecular dynamics simulations, in silico drug design, etc. This course is ideal for Chemistry, Biochemistry, Bioinformatics, and Pharmaceutical Science students.

CHEM 09250: Quantitative Analysis (Lecture And Lab) 4 s.h.
Prerequisites: CHEM 06101 or CHEM 06106
This course provides lecture and laboratory experience in classical methods of gravimetric and volumetric analyses as well as electrical and spectroscopic analyses.

CHEM 09330: Chemical Analysis of Cannabinoids 3 s.h.
Pre-requisites: (CHEM 09249 or CHEM 09250) and (CHEM 07201 or CHEM 7202 or CHEM 7203)
This course is an introduction to the various aspects of chemical analysis that are used for the characterization of cannabinoid content in a variety of natural and commercial products. The focus will be on extraction, spectroscopic (including IR, UV/Vis, and mass spectrometry), and chromatographic techniques (gas chromatography, liquid chromatography, preparative chromatography, and supercritical fluid chromatography), specifically related to their use for cannabinoid analysis, residual solvent measurements, and pesticide detection.

CHEM 09510: Instrumental Analysis 4 s.h.
Prerequisite: Matriculation into MS Pharmaceutical Sciences or COGS in Industrial Chemistry or Permission of the Instructor
The theoretical basis, construction, and data interpretation of most instruments used by chemist are studied. Among the instruments considered are visible, UV, IR, NMR, AA, fluorescence, flame emission, and mass spectrometers. Electroanalytical, potentiometric, conductometric, electrogravimetric, and voltametric methods of analysis are used. Laboratory experiments allow "hands-on" use of representative instruments. The requirements of this course include a graduate laboratory project. Admission to the course will be at the discretion of the graduate adviser. This course may not be offered annually.

CHEM 09520: Advanced Supramolecular Chemistry 3 s.h.
Prerequisite: Matriculation into MS Pharmaceutical Sciences or COGS in Industrial Chemistry or Permission of the Instructor
The course is about concepts, structures, functions, and applications of supramolecular molecular systems. The supramolecular systems discussed in this course include surface assembled monolayer and multilayers, L-B films, host-guest molecular recognition systems, liquid crystals, and nanoclusters. Application of supramolecular chemistry includes clinic diagnostics, drug design and drug delivery, biomimic, and nanofabrication.

CHEM 09522: Advanced Bioanalytical Chemistry 3 s.h.
Prerequisite: Matriculation into MS Pharmaceutical Sciences or COGS in Industrial Chemistry or Permission of the Instructor
This course will focus on the details of analysis of biomolecules using a variety of analytical techniques including liquid chromatography, electrophoresis and capillary electrophoresis. A thorough discussion of mass spectometry technique, as applied to biomolecules, will be conducted. This course will also introduce students to different DNA analysis techniques and electrochemical biosensors in biology and medicine. This also includes the analytical centrifugation methods as used in determination of molecular weight of biomolecules. This course prepares students for graduate school, careers in pharmacy, medical, and forensic among others.

CHEM 09530: Advanced Chemical Analysis of Cannabinoids 3 s.h.
This course is an introduction to the various aspects of chemical analysis that are used for the characterization of cannabinoid content in a variety of natural and commercial products. The focus will be on extraction, spectroscopic (including IR, UV/Vis, and mass spectrometry), and chromatographic techniques (gas chromatography, liquid chromatography, preparative chromatography, and supercritical fluid chromatography), specifically related to their use for cannabinoid analysis, residual solvent measurements, and pesticide detection.

CHEM 09592: Pharmaceutical Techniques I 3 s.h.
Prerequisite: Matriculation into MS Pharmaceutical Sciences or COGS in Industrial Chemistry or Permission of the Instructor
This course is intended to provide dedicated training for students in the design of research projects and their implementation in a laboratory setting. The course will offer students the opportunity to focus on the preliminary aspects of research design and implementation in one or more sub-disciplines of chemistry relating to the pharmaceutical sciences. Students will be expected to (a) retrieve, understand and evaluate prior contributions in the identified area of study and (b) design and implement hypoyjesis-driven studies within this area of study.

CHEM 09593: Pharmaceutical Techniques II 3 s.h.
Prerequisite: Matriculation into MS Pharmaceutical Sciences or COGS in Industrial Chemistry or Permission of the Instructor
This course is intended to provide dedicated training for students in the chemical, biochemical and computational analysis of the chemical entities with relevance to the pharmaceutical sciences via spectroscopic and other characterization techniques. The course will offer students the opportunity to focus on the preliminary aspects of research design and implementation in one or more sub-disciplines of chemistry relating to the pharmaceutical sciences. Students will be expected to (a) understand, evaluate and discuss scientific information from the primary literature and (b) design and implement research or computational experiments and (c) analyze project outcomes and research data.

CHEM 09594: Pharmaceutical Techniques III 3 s.h.
Prerequisite: Matriculation into MS Pharmaceutical Sciences or COGS in Industrial Chemistry or Permission of the Instructor
This course is intended to provide dedicated training for students in the development of professional, environmental and ethical best practices in the context of pharmaceutical research. The course will offer students the opportunity to focus on managing professional, environmental and ethical challenges in one or more sub-disciplines of chemistry relating to the pharmaceutical sciences. Students will be expected to retrieve, understand and evaluate prior examples of professional, environmental and/or ethical challenges the indentified area of study.

CHEM 09596: MS Thesis Research I 3 s.h.
Prerequisite: Matriculation into MS Pharmaceutical Sciences or COGS in Industrial Chemistry or Permission of the Instructor
This course provides individual laboratory research exploration of a topic beyond the scope of the existing courses. The research performed would be instructor/advisor specific and is based on the current research being performed in the department. The students would be expected to (a) conduct basic and applied research in pharmaceutical sciences, (b) retrieve and review research literature, (c) provide periodic updates and project reports, and (d) write manuscripts for publication in scientific journals or presentations at conferences and meetings.

CHEM 09597: MS Thesis Research II 3 s.h.
Prerequisite: CHEM 09596
This is a continuation course for MS Thesis Research I. The students in this course would either expand upon existing research projects from their earlier course, or start newer research projects, which will be determined on an individual case by case basis. The students would be expected to (a) conduct basic and applied research in pharmaceutical sciences, (b) retrieve and review research literature, (c) provide periodic updates and scientific project reports, and (d) write manuscripts for publication in journals or scientific presentations at conferences and meeetings.

CHEM 09598: MS Thesis Research III 3 s.h.
Prerequisite: CHEM 09597
This is a continuation course for MS Thesis Research II. The students in this course would either expand upon existing research projects from their earlier course, or start newer research projects, which will be determined on an individual case by case basis. The students would be expected to (a) conduct basic and applied research in pharmaceutical sciences, (b) retrieve and review research literature, (c) provide periodic updates and scientific project reports, and (d) write manuscripts for publication in journals or scientific presentations at conferences and meetings.

CHEM 09599: MS Thesis Research IV 3 s.h.
Prerequisite: CHEM 09598
This is a continuation course for MS Thesis Research III. The students in this course would either expand upon existing research projects from their earlier course, or start newer research projects, which will be determined on an individual case by case basis. The students would be expected to (a) conduct basic and applied research in pharmaceutical sciences, (b) retrieve and review research literature, (c) provide periodic updates and scientific project reports, and (d) write manuscripts for publication in journals or scientific presentations at conferences and meetings.

CHEM 09600: MS Thesis Research V 3 s.h.
Prerequisite(s): CHEM 09599. Permission of instructor required.
This is a continuation course for MS Thesis Research IV. The students in this course would either expand upon existing research projects from their earlier course, or start newer research projects, which will be determined on an individual case by case basis. The students would be expected to (a) conduct basic and applied research in pharmaceutical sciences, (b) retrieve, and review research literature, (c) provide periodic updates and scientific project reports, and (d) write manuscripts for publication in journals or scientific presentations at conferences and meetings.

CHEM 09601: PhD Dissertation Research 1 to 9 s.h.
Prerequisite: Matriculation into the PhD Pharmaceutical Chemistry program
The PhD dissertation highlights the innovative research contributions from a doctoral student to the field of pharmaceutical chemistry. The students would be expected to (a) conduct basic and applied research in the field, (b) retrieve, and review research literature, (c) provide periodic updates and project reports, and (d) write manuscripts for publication in scientific journals or presentations at conferences and meetings. This is a long-term process that requires significant time and effort from the student. PhD Dissertation Research is a research course designed to provide necessary time and guidance for the student to work on cutting edge research towards the Ph.D. degree. This course can and will be taken multiple times over the duration of the program.

CHEM 09602: Graduate Seminar 0 s.h.
Prerequisite: Matriculation into the PhD Pharmaceutical Chemistry program
Graduate seminar is a required course for the PhD Pharmaceutical Chemistry students. In this course students give oral reports on topics chosen from the current chemical literature. Students are required to attend local professional meetings as well as the departmental seminars and colloquia to improve their theoretical background.

INTR 01510: Master's Thesis Continuation 9 s.h.
Pre-requisites: CHEM 09596
Continuation of supervised research leading to a master's thesis

INTR 01700: PhD Dissertation Research Continuation 1 s.h.
Permission from the graduate program and cognizant College Dean.
Continuation of supervised research leading to a doctoral dissertation beyond the required research credits required for the program. Requires permission from the graduate program and cognizant College Dean. This course can and will be taken multiple times over the duration of the program.

INTR 06502: Responsible Conduct, Rigor, and Reproducibility in Science 3 s.h.
This graduate level course focuses on providing students with an overview of critical considerations and concepts relating to nature of science (NOS), responsible conduct of research (RCR), rigor & reproducibility, scientific citizenship, the scientific enterprise and ethical and philosophical issues in the applied sciences.

CEE 08503: Special Topics Civil Engineering 1 to 6 s.h.
Civil engineering topics related to recent developments in industrial practice or engineering research. May be repeated.

CEE 08504: Engineering Estimating 3 s.h.
The course deals with the development of engineering estimates for civil engineering projects and project components including labor, materials and equipment. Total project costs including direct and indirect costs, field and home-office costs, and contingency are covered. Also covered are the various types of civil engineering estimates including piles and cofferdams, wellpoints and earthdrilling, water and sewer systems, road and highway pavements, concrete buildings and bridges, and steel buildings and bridges. The course includes appropriate computer applications.

CEE 08507: Prestressed Concrete 3 s.h.

CEE 08512: Advanced Environmental Treatment Process Principles 3 s.h.
Topics in Fundamentals of Physicochemical Processes in Environmental Engineering such as Adsorption, Coagulation/Flocculation, Filtration, Sedimentation, Disinfection, Ion Exchange, Chemical Oxidation, Corrosion and Membranes.

CEE 08513: Environmental Management 3 s.h.
This course deals with integrated environmental management issues and methodologies with a global perspective. Topics include environmental decision-making from a socio-economic and environmental standpoint, environmental data collection, analysis, and management techniques for environmental assessment and feasibility case studies. The course is intended to give students an understanding of current environmental issues and tools for analysis of data for environmental management. The issues are examined from the worldwide perspectives of science, engineering, business and society. The course will culminate in an original research project and presentation.

CEE 08522: Site Remediation Engineering 3 s.h.
Topics in site remediation engineering, including site characterization, site safety, modeling site conditions, conducting feasibility studies, and designing remediation systems, such as pump and treat, stabilization, containment, treatment walls, natural attenuation, enhanced bioremediation, phytoremediation, oxidation, soil flushing, and soil vapor extraction.

CEE 08531: Solid and Hazardous Waste Management 3 s.h.
The course deals with solid and hazardous waste sources, regulations and management; engineering principles, treatment and disposal methods; design of landfills; recycling; toxicology principles; and risk assessment. The course includes appropriate laboratory experiments and computer applications.

CEE 08532: Pollutant Fate and Transport 3 s.h.
Topics include Characteristics and Properties of Organic Pollutants, Aquatic Chemistry, Transport Mechanisms for Pollutants (Adsorption, Retardation, Attenuation, Volatilization, Biodegradation), Groundwater (Properties, Flow Equations, Transport in Porous Media) and Mathematical Modeling.

CEE 08533: Integrated Solid Waste Management 3 s.h.
The course deals with the theories and principles of integrated solid waste management as applied to real-world analysis and design problems. The course covers the design of facilities and programs, such as landfills, composting facilities, transfer stations, collection programs, and drop-off centers, and planning of integrated systems for municipalities and counties. Computer applications are included.

CEE 08538: Advanced Biological Treatment Processes for Engineers 3 s.h.
This engineering course will allow students to apply engineering concepts and techniques for the characterization and design of mathematical modeling of human impacts on microbial systems and vice versa. Special consideration will be given to microbe-mediated cycling of organic materials (i.e., pollutants) in natural and engineered systems, including: conventional water and wastewater treatment, municipal landfills, pristine and contaminated groundwater and surface waters, etc.

CEE 08541: Advanced Surface Hydrology 3 s.h.
This course is to increase knowledge on the application of advanced hydrologic methods to water resources problems. Specifics include the use of probabilistic techniques to characterize hydrologic processes. Such analyses are characterized by data collection, analysis and interpretation, simulation, and forecasting. The level of understanding should, upon completion of the course, be sufficient to understand and appreciate the important issues in the current literature where statistical and optimization methods are used in prediction and interpretation of hydrologic processes. Synergy between hydrological processes and environmental quality, hydrometeorology, global warming, informatics, and ecology and conservation will be discussed.

CEE 08542: Advanced Hydrometerology 3 s.h.
This course introduces advanced topics in hydrometeorology to the students and latest technologies used by water resources engineers for understanding, modeling and simulating the global water issues. This course will investigate the relationship between hydrology and meteorology and focus on key processes including precipitation, stream and ground water flow, flooding, water chemistry and contamination, and water resource management. A large component of the course will include collecting and analyzing data, estimating stream flow, and using spreadsheet and graphic programs to monitor water levels following precipitation events. Students in the class will use state of the art software to analyze the collected datasets. Topics included in this course are intended for students engaged in environmental and water resources engineering. The course is designed for students that are familiar with key concepts from courses in mathematics, hydrology, and water monitoring.

CEE 08543: Advanced Water Resources Engineering 3 s.h.
This course covers advanced topics in water resources engineering including the analysis and design of advanced hydraulic structures, hydraulic similitude and modeling, wave action, and advanced hydrology.

CEE 08544: Hydraulic Design 3 s.h.
The course focuses on the design and analysis of structures for controlling and conveying water in both the built and natural environment. Topics covered vary from year to year based upon instructor and student interests. Past topics have included open channel flow design, dams and spillways, sanitary and storm sewers, culverts, pumping stations, turbomachinery, and hydraulic similitude and modeling.

CEE 08545: Water and Environmental Monitoring 3 s.h.
The course focuses on the engineering study of fluid flow in the environment. Advanced topics in water resources engineering are explored, with content varying based upon instructor and student interests. Past topics have included open channel flow, hydrology, fish passage at hydraulic structures, sediment transport, mixing in natural water bodies, and water quality modeling.

CEE 08546: River Engineering 3 s.h.
This course presents the theory and analytical techniques for the design and analysis of engineering projects that control or convey water in open channel systems. Topics include sediment transport, design of hydraulic structures, river restoration, and computer modeling. The course will culminate in an original research project and presentation.

CEE 08547: Watershed Engineering 3 s.h.
This course presents the theory and analytical techniques for the design and analysis of stormwater management projects. Topics include environmental law, stormwater mitigation structures, rainfall-runoff analysis, limnology, and computer modeling. The course will culminate in an original research project and presentation.

CEE 08548: Water and Environmental Monitoring 3 s.h.
Prerequisite: Graduate Standing or Instructor Permission
Introduces the latest and techniques used by water resources and environmental engineers for mapping, modeling and monitoring. The applied goal of this class is to develope an understanding of water and environmental spaces and how maps represent them. This course will provide an overrview of the application of advance geographic information system, remote sensing and complex mapping in water ressources and environmental engineering. Students will use satellite images to extract data and produce viable information. Students will become familiar with state of the art software in romoet sensing and mapping.

CEE 08552: Foundation Engineering 3 s.h.
The fundamental theme of the course is the analysis and design of structural building and bridge foundations based on advanced principles of soil mechanics. These advanced principles of soil mechanics include compressibility, shear strength, and bearing capacity. The types of foundations analyzed and designed include spread footings and pile foundations. The course includes appropriate computer applications.

CEE 08553: Earth Retaining Systems 3 s.h.
The fundamental theme of the course is earth retaining systems including advanced principles of soil mechanics and analysis and design of earth retaining systems. The advanced principles of soil mechanics include lateral soil pressure and slope stability. The analysis and design of earth retaining systems includes slopes, embankments, retaining walls and other systems. The course includes appropriate laboratory experiments and computer applications.

CEE 08562: Advanced Transportation Engineering 3 s.h.
The fundamental theme of the course is the study of advanced topics in transportation engineering including advanced highway engineering and advanced mass transit systems. These advanced topics include the impact and interaction of sociological, economic, geographic and environmental factors on transportation systems. The course includes appropriate field measurements and computer applications.

CEE 08564: Advanced Design of Elements of Transportation Engineering 3 s.h.
The fundamental theme of the course is the study of advanced topics in highway design and analysis, signalized and un-signalized intersection design, forecast travel demand modeling and transportation planning. Topics covered vary from year to year based upon instructor and student interests. This course also includes field measurements and computer applications.

CEE 08565: Advanced Pavement Analysis and Evaluation 3 s.h.
Prerequisite(s): CEE 08361
The fundamental theme of the course is the engineering study of pavement response. The topics covered include non-linear behavior of pavement materials and interaction between tires and pavements. Modeling and analysis of pavement behavior will also be taught, with content varying based upon instructor and student interests. The course includes field experiments and computer applications.

CEE 08566: Transportation Systems Modeling 3 s.h.
Prerequisite: Graduate Standing or permission of theinstructor
Introduces latest technologies and techniques used by transportation planners and engineers to study current travel characteristics and estimate future travel demand and supply. This course focuses on urban travel characteristics and activity analysis, travel demand and supply analysis, transportation system and project evaluation, and program and project implementation strategies. The course will (1) introduce concepts, procedures and methods associated with transportation planning; (2) provide basic knowledge of travel demand forecasting models; and (3) provide basic knowledge of relevant travel demand modeling software. The proposed course is designed for both undergraduate and graduate students who want to develop their career in transportation engineering and planning. Students in this class will deliver research papers/reports beyond those expected for students in CEE 08466, Introduction to Urban Transportation Planning.

CEE 08568: Intelligent Transportation System 3 s.h.
The course will focuses on systems engineering & Intelligent Transportation System (ITS) fundamentals and design of regional ITS fundamentals. The course will introduce selected tools required to plan, design, implement and evaluate ITS projects. Students will work on projects that require data collection, simulation and analysis using various tools. The course is designed to investigate multidisciplinary aspects of ITS design and plan solutions for current and future transportation system.

CEE 08573: Advanced Structural Analysis 3 s.h.
The course deals with the matrix method of structural analysis. The topics covered include structural members, member joints, member end conditions, local and global coordinate systems, coordinate transformation, member structural matrices, global structural matrices, condensation of global structural matrices, static structural analysis, and dynamic structural analysis. The course will include appropriate computer applications.

CEE 08574: Advanced Structural Mechanics 3 s.h.

CEE 08575: Advanced Fatigue And Fracture 3 s.h.
This course presents the theory and analytical techniques to design structural components for cyclic loading. Topics include linear elastic fracture mechanics; S-N fatigue; fatigue crack growth; and algorithms for simulating three-dimensional crack propagation. The course culminates with an original research project, resulting in both oral and written reports.

CEE 08576: Advanced Portland Cement Concrete 3 s.h.
This course deals with the proportioning properties, and performance of different types of portland cement mixtures. It covers cementitious materials, admixtures, aggregates, microstructure, strength and durability; mixture design, properties, advanced performance testing of special types of concrete, such as high-strength, lightweight, fiber-reinforced, and self-consolidating portland cement concretes.

CEE 08577: Transportation Safety System 3 s.h.
This course serves as an introductory course in the fundamentals and concepts of transportation safety for Civil Engineering students. The course introduces technologies and techniques used by transportation engineers to evaluate highway safety and develop effective safety countermeasures/strategies. Upon the completion of this course, students will: • Understand concepts, procedures, and methods associated with the transportation safety system • Understand basic knowledge of human factors and the fundamentals of highway safety • Apply the roadway safety management process at a small roadway network • Use predictive methods to estimate the number of crashes for different facility types • Improve writing and presentation skills

CEE 08583: Advanced Steel Design 3 s.h.
Prerequisite: CEE 08383
This course addresses advanced topics not covered in a first course in steel design including topics such as design of plate girders, connections, and structural frames bracing. Historic and current research that is the foundation of code requirements will be discussed.

CEE 08584: Prestressed Concrete 3 s.h.
The course focuses on analysis and design of prestressed concrete members for highway bridges, parking structures, office buildings and industrial buildings. Topics covered include prestressed construction applications and materials, flexural analysis of pretensioned and post-tensioning beams, bending and shear design, loss of prestress, deflection and composite beams. The course includes appropriate computer applications.

CEE 08585: Advanced Reinforced Concrete 3 s.h.
The emphasis is the design of advanced reinforced concrete structures and structural components not covered in an introductory reinforced concrete design course. Topics include columns in bending, slender columns, slab systems, and other advanced topics in reinforced concrete.

CEE 08586: Bridge Engineering 3 s.h.
The analysis and design of modern steel highway bridges utilizing the bridge code of the American Association of State Highway and Transportation Officials is emphasized. The topics covered include bridge loads, load combinations, design methods, reinforced concrete deck slabs, steel wide-flange stringer bridges, steel composite wide-flange stringer bridges, continuous bridge spans, steel composite plate-girder bridges, elastomeric bearing connections, steel fixed bridge connections, and steel roller bridge connections. The course includes appropriate computer applications.

CEE 08588: Advanced Pavement Rehabilitation Methods 3 s.h.
This graduate course provides a wide knowledge in pavement distresses and rehabilitation, data collection and monitoring, pavement performance modeling, and economic analysis. Pavement rehabilitation and management is an essential part of pavement engineering as it improves the safety of our roadways and preserves our infrastructure assets. This course will use practical, industry-based data, methods, and evaluation techniques to evaluate roadway conditions, determine appropriate rehabilitation strategies, and assess economic impacts of pavement management. The graduate course will also include a semester long case-based research study using collected pavement performance data. Recent research on the influences of innovative technologies and sustainability on pavement rehabilitation strategies will be discussed

CEE 08603: Special Topics for Doctoral Students in Civil Engineering 3 s.h.
This course presents timely coverage of specific advanced and emerging topics in civil engineering, and it is intended for doctoral students. Special topics courses may be traditional classroom-based courses as well as research-related courses supervised by specific advisers. This class may be taken multiple times when offered with different special topics content.

CEE 08658: Engineering Geology and Rock Engineering 3 s.h.
This course provides a wide knowledge in engineering geology, rock mechanics and associated engineering applications, which will cover topics such as geological structures, geological map, rock types and minerals, laboratory and field testing of rocks, rock excavations and support, and rock structures (e.g. slopes, foundations, caverns, tunnels). Engineering geology and rock engineering form the backbone of today's fossil energy exploration, energy production, geological storage and subsurface infrastructures. The influences of rock properties on the engineering performance of rock structures will be discussed. Students will have the opportunity to access and operate experiments on rock microstructure characterization from the research lab.

CEE 08675: Fracture Mechanics 3 s.h.
This course covers the behavior of cracks in bodies, and has a wide range of applications. Discussion focuses on the treatment of the singular stress and strain fields that occur near crack tips, with particular emphasis on fracture mechanics parameters such as K, G and J. Course material will include both elastic and plastic behavior. Both approximate and exact approaches will be considered. Numerical and analytical solutions and solution techniques will be presented. This course might not be offered annually.

ENGR 01469: Introduction to Connected Vehicle Technology 3 s.h.
Connected Vehicle Technology (CVT) has potential to transform the existing surface transportation system into next generation sustainable transportation system by improving safety, operational efficiency, and reducing environmental impacts. The success of connected mobility relies on efficient integration of traffic flow principles, advanced sensors, computing tools & electronics, communications technologies, and management strategies. However, the transportation professionals will be required to master complexity of connected mobility systems and its components to evaluate, operate, and maintain future surface transportation systems. This course will introduce characteristics of the future mobility systems and overview of planning, designing, deploying and operating of future connected mobility systems. The course is designed for students that are familiar with intelligent transportation system.

ENGR 01569: Connected Vehicle Technology 3 s.h.
This course will introduce characteristics of the future mobility systems and overview of planning, designing, deploying and operating of future connected mobility systems. The advanced multidisciplinary topics include wireless communication technologies, transportation data analytics and traffic simulation. Students will utilize advanced tools to plan and design connected vehicle technology applications. The course is designed for students that are familiar with intelligent transportation system.

ENGR 01580: Advanced Viscoelasticity 3 s.h.
This course covers the fundamentals of linear and non-linear viscoelastic behavior of materials: constitutive modeling, experimental development of material properties, and solution of classic problems. Non-linear viscoelasticity and the effect of temperature on non-linear viscoelastic properties are presented. Standard experimental methods to characterize determine viscoelastic properties are discussed. Classic solutions, and the use of time-temperature superposition of solutions, are presented. In addition, the doctoral students will conduct testing and analysis of viscoelastic material to validate existing viscoelastic models. This course might not be offered annually.

STEM 01540: STEM: Automative & Robotics for Middle School Teachers 1.5 s.h.
Prerequisites: completed Bachelor's degree in any of the sciences, math, elementary education, secondary education or engineering. Currently teaching high school level science/ math /technology (or hired to teach in the fall term) in a school using the PL TW curriculum.
This course uses solid modeling to introduce students to the design process. Utilizing this design approach, students understand how solid modeling has influenced their lives. Students also learn sketching techniques, and use descriptive geometry as a component of design, measurement, and computer modeling. Using design briefs or abstracts, students create models and documentation to solve problems. This course is a credit-bearing companion to the Project Lead the Way (PL TW) non-credit training in Design and Modeling for teachers. Teachers interested in enrolling in this class must be currently enrolled in the PLTW course. Faculty Workload Hours: TBD This course will be taught by adjuncts selected from a pool of Project Lead the Way master teachers at the mutual agreement of Rowan and PL TW at a rate established nationally by PLTW and its University Affiliates Info for Registrar only. Faculty Load Hours does not appear in the catalogue)

STEM 01541: STEM: Design & Solid Modeling Middle School 1.5 s.h.
Prerequisites: completed Bachelor's degree in any of the sciences, math, elementary education, secondary education or engineering. Currently teaching high school level science/ math /technology (or hired to teach in the fall term) in a school using the PL TW curriculum.
This course uses solid modeling to introduce students to the design process. Utilizing this design approach, students understand how solid modeling has influenced their lives. Students also learn sketching techniques, and use descriptive geometry as a component of design, measurement, and computer modeling. Using design briefs or abstracts, students create models and documentation to solve problems. This course is a credit-bearing companion to the Project Lead the Way (PL TW) non-credit training in Design and Modeling for teachers. Teachers interested in enrolling in this class must be currently enrolled in the PLTW course. Faculty Workload Hours: TBD This course will be taught by adjuncts selected from a pool of Project Lead the Way master teachers at the mutual agreement of Rowan and PL TW at a rate established nationally by PLTW and its University Affiliates Info for Registrar only.

STEM 01550: STEM: Engineering Designs & Solid Modeling 3 s.h.
Prerequisites: completed Bachelor's degree in any of the sciences, math, elementary education, secondary education or engineering. Currently teaching high school level science/ math /technology (or hired to teach in the fall term) in a school using the PL TW curriculum.
This course introduces content that high school teachers would find appropriate for 9th or 10 th grade students who are interested in design and engineering. The major focus of the course is to expose students to design process, research and analysis, teamwork, communication methods, global and human impacts, engineering standards, and technical documentation. The course applies and concurrently develops secondary level knowledge and skills in mathematics, science,

and technology. The course of study includes: Design Process; Modeling; Sketching; Measurement; Statistics; Applied Geometry; Presentation Design and Delivery; Engineering Drawing Standards; CAD Solid Modeling; and Reverse Engineering. This course is a credit-bearing companion to the Project Lead the Way (PLTW) non-credit training called Introduction to Engineering Design for teachers. Teachers interested in enrolling in this class must be currently enrolled in the PL TW course.

STEM 01551: Principles of Engineering for High School Teachers 3 s.h.
Prerequisites: completed Bachelor's degree in any of the sciences, math, elementary education, secondary education or engineering. Currently teaching high school level science/ math /technology (or hired to teach in the fall term) in a school using the PL TW curriculum.
This course is a credit-bearing companion to the Project Lead the Way (PLTW) non-credit training called Principles of Engineering. Teachers interested in enrolling in this class must be currently enrolled in the PL TW course. Faculty Workload Hours: TBD This course will be taught by adjuncts selected from a pool of Project Lead the Way master teachers at the mutual agreement of Rowan and PL TW at a rate established nationally by PL TW and its University Affiliates.

STEM 01552: STEM: Digital Electronics for High School Teachers 3 s.h.
Prerequisites: completed Bachelor's degree in any of the sciences, math, elementary education, secondary education or engineering. Currently teaching high school level science/ math /technology (or hired to teach in the fall term) in a school using the PL TW curriculum.
Digital Electronics for High School Teachers is the study of electronic circuits that are used to process and control digital signals. The major focus of this course is to expose students to the process of combinational and sequential logic design, teamwork, communication methods, engineering standards, and technical documentation. Utilizing the activity-project-problem-based (APPB) teaching and learning pedagogy, students will analyze, design and build digital electronic circuits. This course introduces educators to content that is appropriate for 1Oth or 11th grade students interested in electronics. This course assumes no previous electronics knowledge however proficiency in college preparatory math is needed. This course is a credit-bearing companion to the Project Lead the Way (PLTW) non-credit training in Digital Electronics for teachers. Teachers interested in enrolling in this class must be currently enrolled in the PLTW course.

STEM 01553: STEM: Civil Engineering and Architecture for High School Teachers 3 s.h.
Prerequisites: completed Bachelor's degree in any of the sciences, math, elementary education, secondary education or engineering. Currently teaching high school level science/ math /technology (or hired to teach in the fall term) in a school using the PL TW curriculum.
Currently teaching high school level science/ math /technology (or hired to teach in the fall term) in a school using the PL TW curriculum. The major focus of this course is a long term project that involves the development of a local property site. As students learn about various aspects of civil engineering and architecture, they apply what they learn to the design and development of this property. The course of study includes the roles of civil engineers and architects, project planning, site planning, building design, and project documentation and presentation. This course is a credit-bearing companion to the Project Lead the Way (PLTW) non-credit training in Civil Engineering and Architecture for teachers. Teachers interested in enrolling in this class must be currently enrolled in the PL TW course.

CEE 08563: Advanced Pavement Analysis And Evaluation 3 s.h.
The fundamental theme of the course is the engineering study of pavement response. The topics covered include non-linear behavior of pavement materials and interaction between tires and pavements. Modeling and analysis of pavement behavior will also be taught, with content varying based upon instructor and student interests. The course includes field experiments and computer applications.

CMS 04208: Business and Professional Communication 3 s.h.
Prerequisite: CMS 04205
This course offers a unique emphasis on communication in the workplace. Techniques for negotiating communication in today's ever-changing business world will be focused on, with attention to business communication concepts. These concepts range from management and leadership models to ethics in message communication. Significant attention to various aspects of business presentations and interviewing strategies help to prepare students for success regardless of their past experience.

CMS 04210: Mass Media And Their Influences 3 s.h.
Prerequisites: ENGL 05105 or COMP 01112 or ENGR 01201 or permission of instructor
This course studies the impact on our daily lives of television, radio, films, magazines and newspapers. Students examine how the media influence politics, purchases, and entertainment, and how the media affect the culture in shaping beliefs and attitudes. It discusses how each of the media operates and what each accomplishes. This course examines the gap between real life and "mediated" reality.

CMS 04215: Fiction To Film 3 s.h.
Prerequisite: 30 credits required
This course provides comparative study of film and literature. Students learn the critical vocabulary of literature and film and enhance their understanding of both art forms. The course covers American and foreign works.

CMS 04220: Interpersonal Communication 3 s.h.
Students explore the basic theories and concepts of interpersonal communication research. Some areas to be covered include perception and social cognition, the relationship of culture to interpersonal communication, self-perception and communication, interpersonal systems, sex/gender and interpersonal communication, and interpersonal communication contexts (i.e., family, friendship, romance).

CMS 04225: Semantics 3 s.h.
Prerequisites: 30 credits required
This course makes students aware of the relationship between language and human behavior and of the use and abuse of verbal and non-verbal language. It emphasizes meaning, the classification and abstraction processes and the application of semantic principles to the language of literature, politics, advertising and prejudice.

CMS 04250: Communication Theory 3 s.h.
Prerequisites: COMP 01112 or ENGR 01201 or permission of instructor
This sophomore-level course acquaints students with current theories as they apply to a variety of communication environments. Drawing upon a wealth of timely research, students study theories relating to interpersonal, small group, organizational, public and mass communication. The course presents theories through readings as well as extensive class discussion.

CMS 04260: Organizational Communication Theory And Research 3 s.h.
Prerequisites: Comp 01112 or ENGR 01201
Organizational Communication theory and research introduces students to the basics of organizational communication. The class will focus on how scholars and researchers study and understand the communication patterns and relationships that go on in organizations. Students will be asked to consider a variety of perspectives and theories of organizational communication while comparing them to each other and to their own experiences as organizational actors.

CMS 04290: Rhetorical Theory 3 s.h.
Prerequisites: COMP 01112 or ENGR 01201
Rhetorical Theory introduces students to the concept of rhetoric and how it has been theorized from antiquity to the present. The course provides students with a systematic history of rhetorical theory and spotlights significant theorists such as Plato, Aristotle, Cicero, Blair and Burke. Students will explore how both ancient and contemporary theories of rhetoric apply to contemporary society.

CMS 04315: Participatory Media 3 s.h.
Prerequisites: COMP 01112
This course examines the social, economic and political implications of the use of participatory media, which enable audience participation in the production of mediated messages. Students taking this course will study network theory, the historical roots of the participatory culture, collective action and social networking, convergence, and the changing modes of media production. Students will also study legal and social justice issues related to these evolving trends in media use.

CMS 04318: Leadership Communication 3 s.h.
This course surveys theories of leadership communication and looks at leaders from different fields, including business, political, social, religious, and cultural, analyzing their ethical communication, and their vision and transformational influence. The course provides a basic introduction to leadership by focusing on the social construction of leaders and followers. The course will examine topics such as: the nature of leadership, theories of communication and leadership, communication ethics in leadership, creating a vision, communication leadership globally, and leadership for the greater good. The course will combine the theory and practice of leadership communication by having an applied component, such as case study analyses of "real world" leaders, and personal reflection of students' leadership communication skills. Attention will be given to helping students to understand and improve their own leadership performance.

CMS 04325: Linguistics 3 s.h.
Students study the nature of human language by examining four major components: phonology, semantics, syntax, and morphology. Linguistics principally emphasizes linguistic universals, characteristics which all human languages share. Students discuss dialect formation, first-language acquisition in children, and animal communication systems. Students also compare modern linguistic theories.

CMS 04575: Advanced Special Topics In Communication Studies 3 s.h.
Advanced Special Topics in Communication Studies allows students the opportunity to study a specific area of the field of communication studies with great depth. Course topics change as new trends develop and as student interest necessitates scheduling. Topics are selected on the basis of timeliness and the availability of expert staff. General topics are announced as the course is scheduled. Permission of instructor is required for undergraduate enrollment so that adequate preparation for course topic can be ascertained. This course is not offered annually.

CS 01102: Introduction To Programming 3 s.h.
This course acquaints students with the logical structure of a computer, the algorithmic formulation of problems, and a modern high-level programming language. Extensive programming experience is included in the course. Proficiency equivalent to Basic Algebra II (MATH01.195) is expected for this course.

CS 01104: Introduction to Programming and Problem Solving 3 s.h.
This course emphasizes algorithmic solutions of problems. The syntax of the programming language is also studied, as well as the writing of structured code. Proficiency equivalent to Basic Algebra II.

CS 01105: Web Literacy 3 s.h.
This is an introductory course on the world wide web, exposing how it works, and showing students how to use it appropriately. This course teaches students to create and modify basic web pages with markup languages and style directives, and how to embed non-text information such as video, images, and sound. The principles of publishing websites on the Internet and the process by which a page is delivered to end users will also be covered.

CS 01211: Principles Of Information Security 3 s.h.
Students will be exposed to the spectrum of security activities, methods, technologies, and threats. This course will cover a range of key topics in the area of information and computer security including inspection and protection of information assets, detection of and reaction to security threats, taxonomy of security threats, and concentrating on issues in computer and operating systems security, principles of network security, and basics of cryptography.

CS 01501: Essentials of Computer Science I 3 s.h.
Prerequisite(s): matriculation in the MS Computer Science program OR the MS Cybersecurity program OR permission of program coordinator
In this course, students will be exposed to the main principles of essential computer science fundamentals and will develop a deeper understanding of advanced topics including systems programming of complex, low level software interacting with the hardware platform and operating system along with performance constraints. Students will also be proficient with basic scripting and programming in creating simple automated scripts/programs and implementing algorithms utilizing security practices such as bounds checking and input validation.

CS 01502: Essentials of Computer Science II 3 s.h.
Prerequisite: CS 01501 Essentials of Computer Science I plus matriculation in the MS Computer Science program OR the MS Cybersecurity program OR permission of the program coordinator
This course covers advanced facets of numerical, object and string data types as well as different types and categories of data structures including lists (array lists, linked list, doubly linked list, other list types, hash tables), arrays, heaps, queue, stacks, buffers, trees and tables in a relational database. Students will be expected to list the most common structures and data formats for storing data in a computer system, discuss the advantages and disadvantages of different data structures/formats, utilize and implement common data structures. Other topics to be discussed include the SQL query language, efficiency calculations for searching and sorting algorithms, and Linux scripting.

CS 01541: Bioinformatics - Advanced Computational Aspects 3 s.h.
matriculation in the MS Computer Science program or MS Bioinformatics or permission of the program coordinator
This course introduces the advanced student to the computer hardware, software, algorithms and statistical packages that are used in computational aspects of bioinformatics. Hardware topics include multiprocessor clusters, high performance computing, and parallelism. Software topics include message passing and shared memory styles of parallel/concurrent programming languages, databases, avalilable software packages, and visualization techniques for large data sets. Algorithms and statistical packages include those for the studey of molecular biology, evolution, structural biology, and biological networks. Students will design and carry out an independent research project using and developing appropriate bioinformatics algorithms, software and/or hardware. Undergraduate preparation in Calculus, Statistics (preferably Biostatistics), and Introduction to Computer Programming is strongly suggested.

CS 01561: Advanced Computer Environments 3 s.h.
This is an advanced applications course in which the student will learn the effective use of various computer applications for organizing and managing their professional duties, including functioning in computer-supported collaborative work groups. Some specific skills that will be covered include the use of desktop publishing to prepare business plans, advertising copy, etc., the creation and maintenance of World Wide Web pages, the use of presentation packages, the integration of graphics into traditional or multimedia documents, and the use of Internet and commercial data bases (including analysis of data using spreadsheet tools). Students will report on emerging trends in hardware and software and will review issues relating to data security and ethics.

CS 02505: Data Mining I 3 s.h.
Prerequisite(s): matriculation in the MS Computer Science program OR the MS Data Science program OR the COGS in Computational Data Science program OR permission of the program coordinator
This is a first graduate level course in Data Mining, which is designed to teach students the key steps in data mining, along with the primary algorithms related to data acquisition, cleansing, and supervised and unsupervised learning.

CS 02516: Big Data Tools and Techniques 3 s.h.
This is an advanced big data course that will expand students' knowledge of the tools for loading, storing, visualizing and analyzing Big-Data concepts along with NO SQL Databases & Databricks. The course will cover such topics as the concepts and technology behind Big Data, Cloud, Spark, NO SQL Databases.

CS 02530: Advanced Database Systems: Theory And Programming 3 s.h.
Prerequisite(s): Matriculation in the MS Computer Science program OR the MS Data Science program OR the COGS in Computational Data Science program OR the COGS in Software Engineering program OR permission of the program coordinator
This course focuses on the design of DBMS and their use to create databases. The course covers both the theoretical concepts and the implementation aspects of database systems with a special emphasis on relational database systems, SQL, programming (in a modern programming language such as C++ or Java) using a real database Application Programming Interface (such as JDBC or ODBC).

CS 02570: Information Visualization 3 s.h.
Prerequisite(s): matriculation in the MS Computer Science program OR the MS Data Science program OR the COGS in Computational Data Science program OR permission of the program coordinator
This is a graduate level course in Information Visualization. Topics covered include graphics programming, information visualization general principles, visualization techniques for 1-dimensional, 2-dimensional, and N-dimensional information, graph visualization, visualization techniques for image and digital libraries, as well as for the World Wide Web, interactivity, theories behind information visualization, and focus+context techniques. This course also includes the implementation of techniques presented in lecture. Students are encouraged to devise new techniques, implement them, and determine their effectiveness. Students will be required to complete in-depth assignments, read, summarize, and present recent journal papers from the information visualization literature, and prepare term papers with regard to an information visualization research topic. Students will also be required to specify, design, implement, and document a semester-long software project related to information visualization.

CS 02605: Data Mining II 3 s.h.
Prerequisite(s): CS 02505 Data Mining I plus matriculation in the MS Computer Science program OR the MS Data Science program OR the COGS in Computational Data Science program OR permission of the program coordinator
This course follows Data Mining I which is designed to train students in the necessary algorithms for extracting intelligence from large datasets. In Data Mining II, more advanced topics are covered including advanced clustering techniques, Principal Component Analysis, Naïve Bayes clustering and other techniques.

CS 02620: Data Warehousing 3 s.h.
Prerequisite(s): CS 02530 Advanced Database Systems: Theory and Programming plus matriculation in the MS Computer Science program OR the MS Data Science program OR the COGS in Computational Data Science program OR permission of the program coordinator
This course is designed to teach students data modeling, enterprise data integration, and other issues related to managing massive data sets necessary for data mining for business intelligence. The course focuses on data warehousing and cloud storage, with an emphasis on modeling and architectures, and their application to decision support.

CS 02625: Data Quality and Web Text Mining 3 s.h.
Prerequisite(s): CS 02530 Advanced Database Systems: Theory and Programming plus matriculation in the MS Computer program OR the MS Data Science program OR the COGS in Computational Data Science program OR the COGS in Health Data Management program or permission of the program coordinator
This course studies data quality problems and solutions in the context of text and web mining, which is the exploration of vast amounts of digitized text for use in knowledge discovery or more particularly drug discovery in the biomedical field.

CS 02630: Advanced Topics in Database Systems 3 s.h.
Pre-requisite: CS 02530 Advanced Database Systems: Theory and Programming plus matriculation in the MS Computer Science program OR the MS Data Science program OR the COGS in Software Engineering program or permission of the program coordinator
This course will introduce a broad spectrum of database technologies with a particular focus on NoSQL systems. Contrasting database approaches will be assessed and evaluated. Topics discussed will be advanced and contemporary, and selected from areas such as distributed databases, sharding, principles of physical data storage, use of publishing/subscribe models, blob storage, geospatial and time-sequence databases, and object-relational modeling. Students will be expected to deliver applications in a variety of modern databases and critically analyze scholarly database articles.

CS 03500: Foundations of Cybersecurity 3 s.h.
Prerequisite(s): Matriculation in the MS Cybersecurity program OR the COGS in Cybersecurity Principles or permission from the program coordinator
This course introduces students to the fundamental cybersecurity concepts and provides students with basic security design principles and fundamentals. The topics of the course also include the components and their functions of an information technology system, cyber threats and different types of attacks and attackers, and application of forensics techniques to investigate and analyze network traffic.

CS 03506: Cybersecurity Management, Policy, and Risk 3 s.h.
Prerequisite(s): Matriculation in the MS Cybersecurity program OR the COGS in Cybersecurity Principles or permission from the program coordinator
This course covers cybersecurity planning and management, security risk analysis, policy, legal, ethics and compliance issues and security program management from a technical cybersecurity perspective.

CS 03551: Advanced Cyber Security: Principles and Applications 3 s.h.
Prerequisite(s): Matriculation in the MS in Computer Science program OR the MS Cybersecurity program OR the COGS in Cybersecurity Principles OR the COGS in Cybersecurity Architecture OR permission of the program coordinator
This graduate course examines the principles of cyber security and will introduce students to a wide range of security activities, methodologies, and procedures. The topics covered in the course include fundamental concepts of computer security: threats, attacks, and assets; principles of cryptography: encryption, decryption, authentication, and non-repudiation; software security and trusted systems: developing secure software, buffer overflow attacks, operating security issues, trusted systems; network security: intrusion detection, firewalls and intrusion prevention systems, distributed denial-of-service attacks, malicious software, protocols for network security; as well as other topics.

CS 03570: Cyber Defense Of Operating Systems and Networks 3 s.h.
Pre-requisites: matriculation in the MS in Computer Science program OR the MS Cybersecurity program OR the COGS in Cybersecurity Principles OR the COGS in Cybersecurity Architecture OR MS Computer Science Accelerated and CS 01501 and CS 01502 or permission of the program coordinator
This course covers an in depth look on the role of operating system security, its basic functions, and the services it provides related to cyber attacks. Students will become familiar with typical network cyber attacks and their defenses as well as how these attacks can influence the behavior of an operating system. Students will also learn how to assess the security capabilities of a computing system using some standard evaluation criteria (such as the Trusted Computer System Evaluation Criteria used by the Department of Defense). Students will then learn to improve the robustness of an operating system by applying methods related to managing applications, services and network ports to harden an operating system. At least one open source operating system's capabilities will be studied as it relates to the chosen standard evaluation criteria.

CS 03580: Cloud Computing and the Internet of Things 3 s.h.
Prerequisite(s): matriculation in the MS in Computer Science program OR the MS Cybersecurity program OR the COGS in Cybersecurity Principles OR the COGS in Cybersecurity Architecture OR COGS in Networks OR permission of the program coordinator
This course studies the essential characteristics and services of cloud platforms, their security, their internal structure, and their possibilities and limitations. It provides hands-on experiences in areas such as cloud infrastructure components, security implications of cloud resources, typical instruction sets and architectures of embedded systems, IoT system architectures, IoT networking and security, MQTT and REST protocols, cyber considerations and issues related to embedded systems and IoT devices.

CS 03695: Advanced Topics in Cybersecurity 1 to 4 s.h.
Prerequisite(s): Matriculation in the MS in Cybersecurity program or permission from the program coordinator
This course enables the faculty to offer courses in advanced topics in Cybersecurity which are not offered on a regular basis.

CS 04103: Computer Science And Programming 4 s.h.
Prerequisites: MATH 01122 OR MATH 01130 OR CS 01104
This course emphasizes programming methodology, algorithms and simple data structures. Topics to be covered include top down design of functions and classes, basic data abstraction and encapsulation, control structures, file i/o, user defined classes and object-oriented principles.

CS 04110: Introduction To Programming Using Robots 3 s.h.
This course teaches fundamental programming skills centered in the context of robot programming. Students will program small robots to perform a variety of tasks. In addition to learning a sophisticated programming language, students will gain skills in design techniques and experience working in teams to build complex systems.

CS 04113: Introduction To Object Oriented Programming 4 s.h.
Prerequisite: MATH 01122 or MATH 01130
This course introduces the fundamental concepts of programming from an object-oriented perspective. Topics are drawn from classes and objects, abstraction, encapsulation, data types, calling methods and passing parameters decisions, loops, arrays and collections, documentation, testing and debugging, exceptions, design issues, inheritance and polymorphic variables and methods. The course emphasizes modern software engineering and design. Students are expected to be sufficiently proficient in mathematics such that they are ready to take Calculus I (MATH 01130).

CS 04114: Object Oriented Programming And Data Abstraction 3 s.h.
Prerequisites: CS 04113 or (CS 04103 and CS 04112)
Objects and data abstraction continues from Introduction to Object-Oriented Programming to the methodology of programming from an object-oriented perspective. Through the study of object design, this course introduces software engineering and focuses on file I/O, function prototypes, exception handling, decoupling strategies, and other advanced topics.

CS 04171: Creating Android Applications 3 s.h.
Prerequisite(s): None
This course is designed for students who want to start developing mobile applications on Android platforms and understand the basic concepts of Computer Science. The course will start with the basics of Android programming by covering the most recent version of Android and understanding its development framework. Students will then learn to develop feature-rich Android applications using the MIT App Inventor Integrated Development Environment and learn the basic "Big Ideas" of Computer Science such as, algorithmic thinking, abstractions, logic, flow control, and data representation, storage and manipulation.

CS 04222: Data Structures And Algorithms 4 s.h.
Prerequisite(s): CS 04.114 (C- or better) and MATH 03.160 or MATH 03.150; Corequisite: CS 01205
This course features programs of realistic complexity. The programs utilize data structures (string, lists, graphs, stacks, trees) and algorithms (searching, sorting, etc.) for manipulating these data structures. The course emphasizes interactive design and includes the use of microcomputer systems and direct access data files.

CS 04225: Principles of Data Structures 3 s.h.
Prerequisites: CS 04103 or CS 04113 Minimum Grade of C-
The course features programs of realistic complexity. The programs utilize data structures (strings, lists, graphs, stacks) and algorithms (searching, sorting, etc.) for manipulating these data structures. The course emphasizes interactive design and includes the use of microcomputer systems and direct access data files.

CS 04315: Programming Languages 3 s.h.
Prerequisites: (CS 04222 or CS 04225) and (CS 06205 or ECE 09241)
A study of the fundamental principles underlying the design of programming languages. Students will study two or more languages from contrasting programming paradigms such as Functional, Object-Oriented, Logical, or Concurrent.

CS 04390: Operating Systems 3 s.h.
Prerequisites: CS 04222 and CS 06205
The course concentrates on the design and functions of the operating systems of multi-user computers. Its topics include time sharing methods of memory allocation and protection, files, CPU scheduling, input-output management, interrupt handling, deadlocking and recovery and design principles. The course discusses one or more operating systems for small computers, such as UNIX.

CS 04400: Computer Science - Senior Project 3 s.h.
Prerequisite(s): CS 01205 and CS 07340 and CS 07321
This is an advanced programming course in which students work on large-scale individual or team programming projects and make a formal presentation on their work. The course discusses program development, methodologies and strategies.

CS 04515: Embedded Systems Programming 3 s.h.
Prerequisite(s): matriculation in the MS Computer Science program OR the COGS in Software Engineering program OR permission of the program coordinator
Embedded software is used in almost every electronic device. This course deals with software issues that arise in embedded systems programming. Important concepts covered in this course will include device programming interfaces, device drivers, multi-tasking with real-time constraints, task synchronization, device testing and debugging, and embedded software development tools such as emulators and debuggers. These concepts will be applied to design and implement embedded software for one or more modest-sized embedded systems.

CS 04524: Agile Software Engineering 3 s.h.
Prerequisites: matriculation in the MS Computer Science program OR the COGS in Software Engineering program OR permission of the program coordinator
In this, course students apply in-depth techniques and experience various roles incorporated into the agile software engineering methodology. Ann overview of each of the major software engineering phases is provided and then applied towards the development of faster and more adaptable software. Proficiency in programming is expected of the students entering this course. Students are required to complete in-depth assignments, read, summarize, and present recent journal papers from the agile software engineering literature, and prepare term papers with regard to an agile software engineering research topic.

CS 04548: Programming Languages: Theory, Implementation And Application 3 s.h.
Prerequisite(s): matriculation in the MS Computer Science program OR the COGS in Software Engineering program OR permission of the program coordinator
An intermediate course intended to acquaint the student with the major categories of programming languages and to familiarize the student with one or two languages in each category. The student will complete programming projects in the languages studied. In addition, the student will learn formal mechanisms for specifying the syntax and semantics of languages and techniques for implementing data and control structures.

CS 04563: Concurrent Programming - Theory and Practice 3 s.h.
Prerequisite(s): matriculation in the MS Computer Science program OR the COGS in Software Engineering program OR permission of the program coordinator
This course covers the fundamental concepts of concurrent programming: processes, threads, context switching, atomic instructions/actions, shared data, race conditions, critical sections, mutual exclusion, synchronization, locks, barriers, semaphores, monitors, and rendezvous. Hardware platforms are discussed: shared-memory multiprocessors, multiple CPUs, multiple GPUs. Multithreaded programming languages are described.

CS 04564: Compiler Design Theory 3 s.h.
matriculation in the MS Computer Science program OR permission of the program coordinator
This course centers on the design and use of compilers, the sophisticated computer programs whose function is to translate high-level code to machine language. The following topics are covered: Compiler models, finite state machines, the lexical box, context free grammars, translation grammars, pushdown machines, the syntax box, and the code generator.

CS 04565: Systems Programming 3 s.h.
Prerequisite(s): matriculation in the MS Computer Science program OR permission of the program coordinator
This course covers the internal structures and algorithms of the system kernel of a modern operating system as well as the system call interface to the kernel. Students will gain hands-on experience in system level programming in a modern operating system environment. The emphasis will be on interprocess communications and concurrency. The concept of distributed and client/server computing will also be introduced.

CS 04571: Advanced Topics in Mobile Programming 3 s.h.
Prerequisite(s): matriculation in the MS Computer Science program OR permission of the program coordinator
Students will explore advanced topics in mobile application development. This course explores mobile application genres and the various development tools, languages and environments which are used to create them. The subject starts by requiring students to investigate the mobile application landscape and study some general purpose software development issues and techniques. It then requires each students to choose one of three implementation platforms: iOS (for Apple iPhone), .NET (for Windows Phone 7) or Java (for Android) and to study application development for that platform, implementing a modest application as a core requirement of their study. The subject concludes by looking, in theory, at the different deployment and distribution mechanisms used by mobile application vendors.

CS 04580: Human Centered Computing 3 s.h.
Designed for a mixed population of Computer Science and Psychology students, this class will explore design methodologies and principles. Students will critically evaluate all sorts of interfaces including Windows, Internet search engines, mobile devices, web sites, computer games, simulation environments and remote control devices. Students will learn strategies for prototyping, learn how bootstrapping can build rapid interfaces, conduct usability research, critically analyze scholarly research, get a glimpse into disciplines such as natural language, robotics and information visualization, mine recent case studies for insights, explore some of the latest technological developments at industry leaders like Google, and learn to appreciate the differences and subtleties between good and bad design

CS 04590: Computer Game Design And Development 3 s.h.
Prerequisites: matriculation in the MS Computer Science program OR permission of the program coordinator
This is a graduate level course that investigates advances in technology, science, art, and culture involved in the creation of computer games. Games will be examined in a systems context to understand gaming and game design fundamentals. Students will be required to complete in-depth assignments and present recent conference or journal papers from the computer gaming and game design fundamentals. Students will be required to complete in-depth assignments and present recent conference or journal papers from the computer gaming literature. Extensive study of past and current games will be used to illustrate course concepts. Students will also be required to specify, design, implement, and document a semester-long software project related to computer animation.

CS 04605: Advanced Web Programming 3 s.h.
CS 02530 Advanced Database Systems: Theory and Programming plus matriculation in the MS Computer Science program OR permission of the program coordinator
This course teaches students to create and modify sophisticated data-driven web pages using client-server architecture. Topics covered include non-text information such as video, images, sound, custom web applications, asynchronous communication, accessibility, searching, security, and web server configuration.

CS 04623: Advanced Software Engineering 3 s.h.
Prerequisite: CS 04524 Agile Software Engineering plus Matriculation in the MS Computer Science program OR the COG in Software Engineering program OR permission of the program coordinator
Students will apply their knowledge from Agile Software Engineering to explore in greater depth advanced theory and practice of software engineering techniques. Emphasis will be placed on new and emerging methodologies like SAFE, Lean, Kanban. Students will be expected to compare and contrast various methodologies and techniques and complete in-depth assignments involving conference or journal papers from the software engineering literature.

CS 04670: Advanced Object Oriented Design 3 s.h.
Prerequisite: CS 04524 Agile Software Engineering plus Matriculation in the MS in Computer Science program OR the COGS in Software Engineering program OR permission of the program coordinator
This course will introduce important concepts such as inheritance and polymorphism, which are crucial tools needed for crafting object-oriented solutions to real-world problems. Design patterns that commonly occur in design situations will be covered. A formal notation for describing and evaluating object-oriented designs such as the Unified Modeling Language (UML) will be taught. Students will apply the concepts to design and implement object oriented solutions to one or more reasonably sized real-world problems.

CS 06205: Computer Organization 3 s.h.
Prerequisite(s): Minimum Requirement C- for each of the following: (CS 04113 or CS 04103) and (MATH 03160 or MATH 03150) and Sophmore Standing
This course provides an introduction to computer organization. Students are exposed to the register level architecture of a modern computer and its assembly language. The topics include machine level data representation, von Neumann architecture and instruction execution cycle, memory hierarchy, I/O and interrupts, instruction sets and types, addressing modes, instruction formats and translation.

CS 06310: Principles Of Digital Computers 3 s.h.
Prerequisite: CS 06205
This course provides an introduction to the fundamentals of computer hardware systems. The topics include digital logic, combinational circuits, sequential circuits, memory system structure, bus and interconnection structure, computer arithmetic and the ALU unit, I/O system structure, hardwired control unit, microprogrammed control unit, and alternative computer architectures. This course is not open to students who have taken CS06.370 Digital Design and Lab.

CS 06311: Digital Computer Laboratory 1 s.h.
Corequisites: CS 06310 Prerequisites: CS 06205
This lab course provides the student with hands-on experience in the design and implementation of digital components. State-of-the-art systems are used to design, test, and implement digital circuits: Combinational circuits, sequential circuits, registers, counters, datapath, arithmetic/logic units, control units, and CPU design. This course is taken concurrently with Principles of Digital Computers.

CS 06510: Computer Networks 3 s.h.
Prerequisites: Acceptance into the Computer ScienceMS or BS/MS program
Students in this course study how computer networks work and why they have been designed as we know them. The course covers descriptive material on network architectures and protocols, as well as network performance evaluation and protocol implementation. The course topics include important examples of local, metropolitan and wide area networks; telephone, cellular and wireless networks; the Internet; network security; and design tradeoffs in network systems and their implementations.

CS 06520: Topics In Computer Architecture 3 s.h.
Prerequisite(s): matriculation in the MS Computer Science program OR permission of the program coordinator
Students in this course will study the various performance enhancement techniques and more advanced architectural features of modern computer systems. The topics include DMA, I/O processor, RAID, cache memory, virtual memory, pipelining, RISC, superscalar processors and various advanced parallel architectures such as array processors, vector processors, shared-memory multiprocessors, and message-passing multicomputers. Students will complete independent research projects that may include detailed examination of one or two contemporary computers.

CS 06560: Design/Implement Operatng Systems 3 s.h.
Prerequisite(s): matriculation in the MS Computer Science program OR permission of the program coordinator
Design choices and implementation (algorithms and data structures) of the capabilities of a modern operating system, including processes, concurrency, multithreading, synchronization, multiprocessors, CPU scheduling, interrupt handling, deadlocks, memory management, secondary storage management, file systems, I/O, protection and security. Issues include simplicity, efficiency, abstraction, microkernel, monolithic, client-server, mechanism vs. policy, caching.

CS 07210: Foundations Of Computer Science 3 s.h.
Prerequisites: C- or better in (MATH 03160 or MATH 03150) and one of the following: CS 01102, CS 04103, CS 01104 or CS 04113
This course provides an introduction to the theoretical foundations of computer science, including finite automata, context-free grammars, Turing machines, and formal logic.

CS 07321: Software Engineering I 4 s.h.
Prerequisites: (CS04.222 or CS 04.225) and (CMS 04.205 or ENGR 01.202) and (WA 01.302 or ENGR 01.201)
An introduction to the discipline of Software Engineering. Students will explore the major phases of the Software Lifecycle, including analysis, specification, design, implementation, and testing. Techniques for creating documentation and using software development tools will be presented. Students will gain experience in these areas by working in teams to develop a software system. Proficiency in programming is expected of the students entering this course.

CS 07340: Design And Analysis Of Algorithms 3 s.h.
Prerequisites: CS 04222 and CS 07210
In this course, students will learn to design and analyze efficient algorithms for sorting, searching, graphs, sets, matrices, and other applications. Students will also learn to recognize and prove NP-Completeness.

CS 07422: Theory Of Computing 3 s.h.
Prerequisites: CS 04222 and MATH 01131 and CS 07210
This is an advanced course in the theoretical foundations of computer science, building on the introduction provided in the Foundations of Computer Science course. It studies models of computers, such as finite automata and Turing machines, formal languages, and computability, as well as the fundamentals of complexity theory and NP-completeness.

CS 07510: Mathematical Foundations Of Computer Science 3 s.h.
Prerequisite(s): matriculation in the MS Computer Science program OR permission of the program coordinator
This course provides a graduate-level introduction to the theoretical foundations of computer science, including finite automata, context-free grammars, Turing machines, and formal logic.

CS 07523: Advanced Software Engineering 3 s.h.
Prerequisites: Acceptance into the Computer ScienceMS or BS/MS program
Students will apply their knowledge from Software Engineering to develop an advanced software system, working in teams. The project will be taken through each of the major software development phases, and student teams will create appropriate deliverables for each phase. Advanced modern software engineering topics such as critical systems, real-time systems, formal specification and validation, and project management will be covered. Students will be required to complete in-depth assignments involving conference or journal papers from the software engineering literature.

CS 07530: Computer Science Thesis I 3 s.h.
Prerequisite(s): matriculation in the MS Computer Science program OR permission of the program coordinator
In consultation with the instructor, students will identify and research a specific area of computer science or computer science education. Students will define a thesis project and develop a formal specification of their intended project for completion in Computer Science Thesis II.

CS 07540: Advanced Design And Analysis Of Algorithms 3 s.h.
Prerequisite(s): Matriculation in the MS Computer Science program OR the MS Data Science program OR permission of the program coordinator
Students in this course will study efficient algorithms for sorting, searching, graphs, sets, matrices, and other applications, and will learn to design and analyze new algorithms. Students will also learn to recognize and prove NP-Completeness.

CS 07556: Machine Learning I 3 s.h.
Prerequisite(s): matriculation in the MS Computer Science program OR permission of the program coordinator
This course introduces students to machine learning tasks at the graduate level including classification, regression, learning with unlabeled data), common machine learning approaches, and mathematics required to understand advanced topics in machine learning. Students will be exposed to topics such as data Issues in machine learning, Information-based learning (Decision Tree), Similarity-based learning (k-nearest neighbor), Probabilistic-based learning (naïve Bayes, Maximum A Posteriori, Bayesian Network), Linear Models (Perceptron, Linear Regression, Logistic Regression), Support Vector Machine, Neural Network, Performance measure and evaluation, Descriptive Statistics and Result Visualization, Learning with unlabeled data (clustering), Mathematics for Advanced Topics in Machine Learning (Topics in Probability, Linear Algebra, and Optimization).

CS 07565: Computer Vision 3 s.h.
Prerequisite(s): matriculation in the MS Computer Science program OR permission of the program coordinator
This course examines the fundamental issues in computer vision and major approaches that address them. The topics include image formation, image filtering and transforms, image features, mathematical morphology, segmentation, and object recognition. More advanced topics such as camera calibration, stereopsis, dynamic vision, and computer architectures for vision will also be covered. Independent projects on these advanced topics will be required.

CS 07570: Information Visualization 3 s.h.
This is a graduate level course in Information Visualization. Topics covered include graphics programming, information visualization general principles, visualization techniques for 1-dimensional, 2-dimensional, and N-dimensional information, graph visualization, visualization techniques for image and digital libraries, as well as for the World Wide Web, interactivity, theories behind information visualization, and focus+context techniques. This course also includes the implementation of techniques presented in lecture. Students are encouraged to devise new techniques, implement them, and determine their effectiveness. Students will be required to complete in-depth assignments, read, summarize, and present recent journal papers from the information visualization literature, and prepare term papers with regard to an information visualization research topic. Students will also be required to specify, design, implement, and document a semester-long software project related to information visualization.

CS 07575: TCP/IP And Internet Protocols And Technologies 3 s.h.
Prerequisites: Acceptance into the Computer ScienceMS or BS/MS program
This is an advanced computer networking course that will expand students knowledge received in the Data Communications and Networking course. This course will examine operation of the TCP/IP protocol as well as design and architecture of the Internet. This course will cover such topics as: medium access protocols, address resolution protocols, Internet routing, Internet Protocol (IP), Quality of Service, Transport Protocol, and congestion control mechanisms. This course will also include selected topics on network security and network management. Students will prepare and deliver technical presentations on state-of-the-art research topics in the Internet.

CS 07595: Advanced Topics In Computer Science 1 to 4 s.h.
Prerequisite(s): matriculation in the MS Computer Science program OR permission of the program coordinator
This course enables the faculty to offer courses in advanced topics which are not offered on a regular basis. Prerequisites will vary according to the specific topic being studied.

CS 07622: Advanced Theory Of Computing 3 s.h.
Prerequisite: CS 07510 Mathematical Foundations of Computer Science plus Matriculation in the MS Computer Science program OR permission of the program coordinator
This course builds on the introduction to the theory of computing provided in the course Foundations of Computer Science. It discusses finite automata, formal languages, Turing Machines, and computability theory at an advanced level.

CS 07631: Computer Science Thesis II 3 s.h.
Prerequisite(s): CS 07530
Students will follow their formal project specification developed in Computer Science Thesis I to research a specific area of computer science or computer science education and produce a written thesis.

CS 07632: Computer Science Thesis III 3 s.h.
Prerequisite: CS 07530 AND CS 07631
Students will continue scholarly research that was being done in Computer Science Thesis II and produce a written thesis.

CS 07645: Advanced Robotics 3 s.h.
Prerequisite: CS 07540 Advanced Design and Analysis of Algorithms plus Matriculation in the MS in Computer Science program OR permission of the program coordinator
This course provides an introduction to the fundamentals of robotics. Students study robot manipulators and mobile robots, robot sensors and robot cognition. Students will also gain experience programming in small groups, and programming in a domain where noisy and imprecise data is commonplace. Familiarity with matrix multiplication and inversion is expected for this course.

CS 07650: Concepts In Artificial Intelligence 3 s.h.
Prerequisite(s): CS 07540 Advanced Design and Analysis of Algorithms plus matriculation in the MS Computer Science program OR permission of the program coordinator
This course surveys methods for programming computers to behave intelligently. Topics include knowledge representation methods, heuristic search, theorem-proving, puzzle-solving, game-playing, natural language processing, and expert systems.

CS 07652: Cryptographic Algorithms 3 s.h.
Prerequisite(s): CS 07540 Advanced Design and Analysis of Algorithms plus matriculation in the MS in Computer Science program OR the COGS in Cybersecurity Architecture or permission of the program coordinator
This graduate course examines the advanced topics in the field of cryptography. The course will introduce students to a wide range of topics ranging from mathematical foundations to designing cryptographic algorithms. The topics covered in the course will include the Data Encryption Standard (DES), Advanced Encryption Standard (AES), RSA cryptosystem, ElGamal cryptosystem, elliptic curve cryptosystem, integrity, authentication and key management, cryptographic hash functions, digital signatures, entity authentication, Kerberos, and others.

CS 07655: Natural Language Processing 3 s.h.
Prerequisite: CS 07540 Advanced Design and Analysis of Algorithms plus matriculation in the MS Computer Science program OR permission of the program coordinator
This course presents methods for allowing computers to understand and generate sentences in human languages (such as English) and prepares the student to do research in natural language processing. Topics include syntax, semantics, pragmatics, and knowledge representation.

CS 07656: Machine Learning II 3 s.h.
Prerequisite: CS 07556 Machine Learning I plus matriculation in the MS Computer Science program OR permission of the program coordinator
This course examines the mathematics and theory behind of some Machine Learning approaches, fundamental issues in machine learning, basic learning theory, and recent topics in machine learning. Topics may include Learning problem, Linear Models (Perceptron, Linear Regression, Logistic Regression), Support Machine Learning, Neural Network, Deep Learning, Ensemble method, Theory of Generalization (VC-dimension, Bias and Variance), Regularization, Validation, Dimension Reduction (Principal Component Analysis), and other recent topics in machine learning. This course builds on the materials covered in CS 07556: Machine Learning I.

CS 08560: Computer Graphics 3 s.h.

Prerequisites: matriculation in the MS Computer Science program OR permission of the program coordinator

This is a graduate level course in Computer Graphics. Students will study the use and implementation of graphics packages. Techniques and algorithms for implementing graphics systems will be covered. They include drawing of 2-D primitives; 2- and 3-D transformation and viewing; representing curves and surfaces; hidden line and surface removal; illumination and shading. Substantial programming projects on writing graphics applications and implementing graphics algorithms will be assigned. Students are encouraged to devise new techniques, implement them, and determine their effectiveness. Students will be required to complete in-depth assignments involving conference or journal papers from the computer graphics literature.

CS 08680: Computer Animation 3 s.h.

Prerequisite: CS 08560 Computer Graphics plus matriculation in the MS Computer Science program OR permission of the program coordinator

This is a graduate level course in Computer Animation that takes a look at Computer Animation from a programmer's perspective. It will investigate the theory, algorithms, and techniques for describing and programming motion for virtual 3D worlds. Approaches that will be explored include keyframing systems, kinematics, motion of articulated figures, and procedural and behavioral systems. Students will be required to complete in-depth assignments, read, summarize, and present recent journal papers from the computer animation literature, and prepare term papers with regard to a computer animation research topic. Students will also be required to specify, design, implement, and document a semester-long software project related to computer animation.

CS 09510: Computer Networks 3 s.h.

Prerequisites: matriculation in the MS in Computer Scienceprogram OR the COGS in Networks OR the COGS in Cybersecurity Architecture or permission of the program coordinator

Students in this course study how computer networks work and why they have been designed as we know them. The course covers descriptive material on network architectures and protocols, as well as network performance evaluation and protocol implementation. The course topics include important examples of local, metropolitan and wide area networks; telephone, cellular and wireless networks; the Internet; network security; and design tradeoffs in network systems and their implementations.

CS 09605: Wireless Networks And Systems 3 s.h.

Prerequisite: CS 09510 Computer Networks plus matriculation in the MS in Computer Science program OR the COGS in Networks program OR permission of the program coordinator

This course prepares students to understand wireless networks and systems, and the underlying communications technologies that make them possible. The course covers descriptive material on wireless communications technologies, and important deployed and proposed networks and systems. Wireless system performance and Quality of Service capabilities are addressed. Students will prepare and deliver technical presentations on state-of-the-art topics in wireless networks and systems.

CS 09612: Network Security 3 s.h.

Prerequisite: CS 09510 Computer Networks plus Matriculation in the MS Computer Science program OR permission of the program coordinator

This is a graduate level course that covers the fundamentals of network security and cryptology. The course will cover such topics as cryptographic systems necessary for security, public key infrastructure, principles of data integrity, authentication, and key management, Internet architecture and TCP/IP protocol suite, application layer security, secure sockets layer and transport layer security protocols, IPSec and distributed denial of service attacks. Students will prepare and deliver technical presentations on state-of-the-art research topics in network security.

CS 09675: TCP/IP And Internet Protocols And Technologies 3 s.h.

Prerequisite: CS 09510 Computer Networks plus matriculation in the MS in Computer Science program OR the MS Cybersecurity program OR the COGS in Networks OR the COGS in Cybersecurity Architecture OR permission of the program

This is an advanced computer networking course that will expand students knowledge received in the Data Communications and Networking course. This course will examine operation of the TCP/IP protocol as well as design and architecture of the Internet. This course will cover such topics as: medium access protocols, address resolution protocols, Internet routing, Internet Protocol (IP), Quality of Service, Transport Protocol, and congestion control mechanisms. This course will also include selected topics on network security and network management. Students will prepare and deliver technical presentations on state-of-the-art research topics in the Internet.

DA 03510: Patient Data Understanding 3 s.h.
Prerequisite(s): Graduate standing or permission of the instructor
In this course we focus on understanding the patient and other health-related data, including the various sources of data and their commercial use. Furthermore, industry trends and developments related to health-related data will be researched and tracked by the students.

DA 03511: Patient Data Privacy & Ethics 3 s.h.
Patient Data Privacy & Ethics Prerequisite: Graduate standing or permission of the instructor. 3 s.h. In this course we focus on understanding privacy and ethical issues as they relate to patient and other health-related data, as well as to health information systems. Industry trends and developments will be researched and tracked by the students.

DS 02510: Visual Analytics 3 s.h.
Prerequisite: Graduate standing or permission of the instructor.
This is a graduate level course that investigates visual analytics tools and techniques used to synthesize information and derive insight from massive, dynamic, ambiguous, and often conflicting data, and to communicate the findings effectively for decision-making. Extensive use of case studies based on real-world events will be used to illustrate course concepts. Students will be required to present recent conference or journal papers from the visual analytics literature and to apply visual analytics techniques toward a focused research problem in a real-world application or a domain of interest.

DS 02695: Advanced Topics in Data Science 1 to 4 s.h.
Prerequisite(s): Matriculation in the MS in Data Science program or permission of the program coordinator
This course enables the faculty to offer courses in advanced topics in Data Science which are not offered on a regular basis.

INTR 01265: Computers and Society 3 s.h.
Prerequisite(s): COMP 01112 or HONR 01112 or ENGR 01201

CASE 90800: Current Issues & Research in Access, Success, & Equity in Education 3 s.h.
The purpose of this course is to provide students with an in-depth exploration of the current issues and research surrounding access, success, and equity in P-20 contexts. Students will gain a broad understanding of issues related to the current context of schools through an equity lens, understanding and operationalizing access, success, and equity; understanding diverse populations, systemic inequities, reform efforts, and theoretical frameworks appropriate for studying educational disparities. This course will provide students with relevant skills and understanding of current research, models, and considerations for working with issues of access, success, and equity. The readings, discussions, and assignments are intended to provide information for students aspiring to academic positions.

CASE 90801: Research Seminar in Access, Success, & Equity 3 s.h.
Prerequisites: CASE 90800
The purpose of this class is for students to develop as educational researchers. This course will facilitate the development of doctoral students' research ideas and build community among students and faculty. Under supervision, students will engage in various stages of research activities and will learn how to effectively design, conduct, and disseminate results.

CASE 90802: Internship in the Academic Profession and Professoriate for Promoting Student Success 3 s.h.
Prerequisites: CASE 90800
The purpose of this course is for students to develop as reflective and effective post-secondary educators. Under supervision, students will teach or prepare to teach discipline specific courses while simultaneously reflecting on their experiences of teaching adult students for equitable outcomes. Students will learn how to effectively design and implement curricula, use effective instructional and technological strategies, use assessment to improve teaching, and formulate their own personal philosophy of teaching.

CASE 90803: Equity, Success, and Access Educational Research 3 s.h.
Prerequisite: CASE 90801, CASE 90802.
This seminar is designed to support students approaching their third year in the preparation of dissertation proposal and to facilitate the transition from coursework to dissertation. Students will learn about the dissertation process and develop a plan for completing their dissertation. Each student will prepare a concept paper that frames their dissertation ideas, with emphasis placed on the logical relations between elements. Course must be repeated.

CASE 90810: Quantitative Research Methods in Education 3 s.h.
Prerequisites: CASE 90800
This course provides an introduction to the examination of appropriate quantitative methods in applied educational contexts. Students will learn data analysis strategies for education data with an emphasis on identification and interpretation of findings.

CASE 90811: Multivariate Research Methods in Education 3 s.h.
Prerequisite: CASE 90810
The purpose of this course is to advance students' statistical knowledge with multivariate statistical methods. The course will highlight the implementation and interpretation of these methods. An emphasis will be placed on using statistical methods that simultaneously analyze multiple measurements under investigation in an educational context.

CASE 90812: Qualitative Research Methods in Education 3 s.h.
Prerequisite: CASE 90800
This course introduces students to qualitative research as an approach to exploring and understanding problems of access, success, and equity. This course is required of all PhD students because it lays the foundation to rigorous qualitative empirical research. Beginning with questions of epistemology and an interrogation of competing paradigms, it supports the goals of the program, college, and university by requiring students examine their stance as they undertake research in key areas of access, success, and equity. At the completion of this course students will have fully conceptualized and carried out a qualitative study and written a research paper that can be submitted to a conference.

CASE 90813: Survey Methods in Education 3 s.h.
Prerequisite: CASE 90811
The purpose of this course is for students to examine the major elements involved in planning, conducting, and reporting survey research. An emphasis will be placed on the design, instrumentation, data analysis, and interpretation of survey research.

CASE 90814: Advanced Qualitative Research Methods in Education 3 s.h.
Prerequisite: CASE 90812
This course emphasizes a critical interpretivist approach to qualitative inquiry. It examines critical approaches to research by focusing on contemporary educational problems related to access, equity, and success. This course builds upon Qualitative Research 1 through the exploration of strategies of inquiry, using qualitative data analysis software, and presenting qualitative research.

CASE 90815: Single Subject Study Design in Education 3 s.h.
Prerequisite: CASE 90811
This course provides the students with a basic knowledge of the theoretical bases and methodological procedures of single subject experimental designs. In this course, content includes variety of single subject research designs, procedures in single subject research, and evaluation of single subject research findings applied in an educational context.

CASE 90816: Mixed Methods Research Methods in Education 3 s.h.
Prerequisites: CASE 90810, CASE 90812
This course is an advanced research seminar on approaches to integrating qualitative and quantitative approaches, methods, and data in a single study. The course covers the assumptions and "mental models" that inform both approaches, and the ways in which qualitative and quantitative goals, questions, methods, analysis strategies, and presentation styles can be productively integrated.

CASE 90817: Experimental Design Research Methods in Education 3 s.h.
Prerequisite: CASE 90811
This course provides the students with a basic knowledge of the theoretical bases and methodological procedures of experimental and quasi-experimental designs applied to educational problems involving access, equity, and success. Course content includes experiments and generalized causal inference, statistical conclusions, validity & internal validity, introduction to statistical power/design sensitivity, construct validity, and external validity, quasi-experimental designs, interrupted time series designs, regression discontinuity designs, randomized experiments, and generalized causal inference from single and multiple studies.

CASE 90820: Advocacy, Leadership, and Professional Issues in Counselor Education 3 s.h.
The purpose of this course is to provide advanced graduate student an orientation to counselor education with an understanding of a variety of professional development issues (e.g., research, teaching, consultation, and service). Students will acquire an in-depth understanding of ethical standards of the counseling profession and it application to counselor practice and counselor education. Students will also acquire leadership theory, leadership practice, and advocacy knowledge and skills to help further students, clients, and the counseling profession.

CASE 90821: Advanced Practicum in Counseling for Equitable Career & College Readiness 3 s.h.
Prerequisites: CASE 90820
This course provided advanced graduate students an opportunity to advance to demonstrate and develop counseling skills specifically related to college and career readiness utilizing ethical and culturally relevant counseling practices.

CASE 90822: Advanced Theories of Indiv & Group Coun for Academic, Soc/Emot, & Career Development 3 s.h.

Prerequisite: CASE 90820

This course specifically provides students the opportunity to advance their individual and group counseling skills specifically in the areas of academic, social/emotional, and career development. Students will increase their knowledge based of theories, skills, evidence-based practices, and methods of evaluation counseling effectiveness in both individual and group counseling.

CASE 90823: Supervision in Counselor Education 3 s.h.

Prerequisite: CASE 90821

The purpose of this course is to familiarize students with conceptual, ethical, and methodological issues regarding the supervisory process in the counseling profession. Students will be able to develop and synthesize an ethical and culturally relevant personal approach of implementing counselor supervision that can be applied to a present and/or future setting.

CASE 90824: Adv Theories in Family & Systems Coun, Consul, & Comm Engagement for Ed Access 3 s.h.

This course specifically provides students the opportunity to advance their counseling knowledge, skills, and evidence-based practices specifically in the areas of family and systems counseling, consultation, and community engagement through the lens of educational access for all K-20 students.

CASE 90825: Practicum in Supervision for Counselor Education 3 s.h.

Prerequisite: CASE 90823

This course is intended to assist counselor education doctoral students to apply current supervision facts, concepts, and research in a counseling practicum setting. Furthermore, the course will provide opportunities for experiential learning and skill development in an applied supervisory setting and will enable students to synthesize a personal approach to counselor supervision. This approach will develop out of an integration of knowledge (based on theory) and experience, which can then be applied to a future work setting as a facilitating reflective practitioner.

CASE 90826: Advanced Assessment & Program Evaluation Procedures in Counseling for Access, Equity & Success 3 s.h.

This course extends students' knowledge of the theoretical basis for assessments and assessment techniques used in different counseling settings through a social justice lens. Students will also take an in-depth look at methods of evaluating counseling effectiveness, including the assessment methods used in course development and learn how to conduct program evaluations of counselor education programs.

CASE 90830: Introduction to Postsecondary Education 3 s.h.

The purpose of this course is to provide students with an introduction to the research, theoretical, and practical issues surrounding access to college and equity in postsecondary education institutions. Specifically, it aims to teach students to think critically about access and equity issues related to racial/ethnic minority groups and socioeconomic status. Major themes include: affirmative action, college choice, community colleges, financial aid.

CASE 90831: Organizational Analysis & Administration of Postsecondary Education 3 s.h.

Prerequisite: CASE 90830

This course introduces students to colleges and universities as large, complex organizational systems. Conceptual models for understanding their structures, contexts, and interactions with the broader environment are explored. Major themes include: organizational theory and analysis; the organizational and governance structures in postsecondary education; different models in postsecondary education including two-year and four-year college, public and private colleges, and new developments in the for-profit sector.

CASE 90832: International & Comparative Higher Education 3 s.h.

This course explores key constructs, theories, and issues in international higher education, using comparative techniques. Students will explore contemporary educational problems related to access, equity, and success. Students will also consider the complexities of globalization and international policy flows for the reform, practice, and organization of higher education.

CASE 90833: Public Policy & Analysis in Postsecondary Education 3 s.h.

Prerequisite: CASE 90830

This course introduces students to the policy process affecting American postsecondary education. This course will explore current policies that influence colleges and universities and their students. Specific policy topics including access, equity, finance, and accountability policies in the postsecondary context.

CASE 90834: Student Learning & Development: Impact of Postsecondary Education 3 s.h.
Prerequisite: CASE 90830
The purpose of this course is to provide students with an in-depth exploration of the current theory and conceptual frameworks utilized in research focused on students' learning and development while in college and the impact of college on learning and development. The course foci include: the methodology of studying college impact; conceptual models of student development and the impact of college; learning and cognitive development; moral development; and conducting research on educational attainment, career and economic benefits, and quality of post college life.

CASE 90835: Theoretical and Conceptual Frameworks in Higher Education 3 s.h.
Prerequisite: CASE 90830
The purpose of this course is to provide students with an in-depth exploration of the current theory and conceptual frameworks utilized in research focused on issues of access, success, and equity in higher education settings. Students will gain a broad understanding of issues related to understanding the role of theory and conceptual frameworks in research and research design as well as operationalizing theoretical concepts in research design and data interpretation. Theoretical approaches used in research examining inequality of access and success in higher education will be a focus of the course. These theories include: Critical Theory; Critical Race Theory; Cultural Capital, Social Capital, and Habitus; Status-Attainment; Human Capital; Funds of Knowledge; New Institution Theory; and Post-Structural Theory. This course will provide students with relevant skills to understand and utilize theory in research on access, success, and equity.

CASE 90836: Assessment & Evaluation in Postsecondary Education 3 s.h.
Prerequisite: CASE 90830
This course introduces students to the process of program development, change, improvement and evaluation for postsecondary education. It furthers' students' knowledge of the theoretical basis for assessment and evaluation. Students will learn how to cultivate a culture of inquiry that uses data as an opportunity for exploring equity in programs and broader organizational contexts and developing solutions to improve performance.

CASE 90840: Theoretical Perspectives in the Study of Literacy 3 s.h.
Prerequisites: Admittance to the PhD program (D800)
This course examines influential theories and research that address the broad and continually evolving knowledge-base in literacy. Candidates analyze foundational and cutting edge studies in the field of literacy and consider how leading and often competing reading theories developed over time as well as how seminal research studies were conducted and considered by scholars, practitioners and policy makers. The course emphasizes the ways in which a personal belief system impacts a theoretical orientation to practice and/or research. In addition, the course will focus on research propelling current conversations in the literacy field. Topics explore how the definitions, purposes and practices of literacy often depend on characteristics having to do with language, class, gender, print verses electronic text, and contextual considerations such as in-school verses out-of-school settings or local verses federal policy.

CASE 90841: Transliteracy and Translingualism 3 s.h.
Prerequisites: CASE 90840
This course focuses on transliterate and translingual theories, pedagogies, and policies in K-12 classrooms. Candidates will understand the history of literacy, and the inter-relationship of literacy, context, and culture. It explores how many languages and the power of multiple languages comes into use to communicate and to gain access in a more global world. The course also emphasizes research on current conversations in the field of printed literacy. Finally, students will be able to define what it means to be trans-literate in the 21st century.

CASE 90842: Multicultural & Multilingual Issues in Literacy Education 3 s.h.
Prerequisites: CASE 90840
This course explores multicultural and multilingual issues in local and global educational and societal contexts. Being more common than not, multilingualism exists across the globe in a variety of contexts; students will explore studies in both local and global instances that demonstrate how people negotiate their multilingualism to achieve access and success. Students will draw connections between local to global language issues, and how, at times, the issue is resolved in one context but not the other. Finally, the course focuses on what research in multilingualism means for schools, classrooms, teachers, and teacher educators.

CASE 90843: Literacy as Practice In & Outside of School 3 s.h.
Prerequisites: CASE 90840
This course investigates literacy practices that occur in a range of institutions and social spaces with an interest in expanding conceptions of what counts as literacy. This course introduces students to an array of theoretical frameworks within which contemporary scholars define, study, and explain literate actions as simultaneously individual and collective. These traditions include but are not limited to: critical literacy; socio-cultural theories; activity theory; ethnography of communication; technologically mediated literacies; narrative theories. Tensions between school curriculums and students' out-of-school literacy practices are discussed with emphasis on research as a means to transform school spaces, creating greater success and equity.

CASE 90844: First & Second Language Acquisition 3 s.h.
Prerequisite: CASE 90840
This course examines the theoretical bases and research perspectives on second language acquisition and linguistic diversity in the United States. This course will prepare doctoral students to be able to critically review theories and research on first and second language acquisition and linguistic diversity, select appropriate assessments when conducting research in the field, understand the unique features of second language acquisition that influence language and literacy development, and identify the social and cultural contexts that influence language and literacy development and the success and equity of school learning in general and how to account for this variance in research design.

CASE 90845: The Pedagogy of Literature for Children & Adolescents 3 s.h.
Prerequisite: CASE 90840
This course is an introduction that examines literature used in schools through literacy theories, children's literature, and empirical research that address current theoretical discussions. Candidates will be able to define what is children's literature. In addition, they will examine how literacy theory helps to understand children's literature. They will also look at empirical research on reader response and discover ways it informs pedagogy and creates greater equity in P-12 classrooms.

CASE 90846: Sociolinguistics & Discourse Analysis in Literacy Studies 3 s.h.
Prerequisite: CASE 90840
This is an in-depth study of language and literacy practices in its social context, especially educational contexts. The courses emphasize how language and literacy practices produce an inequitable world, but also how language and literacy can be used to change this inequity. The course will survey various research approaches in literacy studies, including linguistic ethnography and discourse analysis. We will consider the underlying theories guiding these approaches and apply these to data analysis in literacy contexts.

CASE 90850: Access, Success & Equity in Special Education 3 s.h.
This course focuses on historical and contemporary issues of access, success and equity in the field of special education. Students will examine evolving changes in perceptions toward and services for individuals with exceptional learning needs. In addition to investigating multiple contemporary issues in the field of special education, students will prepare an extensive analysis of one current issue affecting individuals with exceptional learning needs and articulate implications that support improved access, success and equity for all persons.

CASE 90851: Research to Practice in Special Education 3 s.h.
Prerequisite: CASE 90850
This course focuses on contemporary research methods and practices in special education. Students will examine how research can change practice and what is needed in order to implement research-based findings in education settings. Students will identify an area of research and prepare an extensive review of the literature thar illustrate the development of this research and its impact on special educational practices as well as the impact on access, success, and equality for all persons.

CASE 90852: Program Evaluation & Planning in Special Education 3 s.h.
Prerequisite: CASE 90850
This course will enable students to identify and develop effective models for evaluating the success of special education programs, including their success in meeting the goal of access, success, and equity for all individuals. Students will study evaluation approaches and formative and summative assessment models that contribute to program evaluation, with a focus on developing a management/decision-oriented evaluation plan. A field experience is a mandatory component of this course. The major course assignment will require students to develop an evaluation plan, complete the program evaluation in their field placement, and report evaluation findings to stakeholders. This course serves as a practicum for the conceptualization and development of a doctoral research study that employs a program evaluation model.

CASE 90853: Leadership, Policy, & Ethics in Special Education 3 s.h.
Prerequisite: CASE 90850
This course focuses on analysis of legislation, litigation, and administrative rulings related to special education. Students will explore professional ethics and standards and build critical knowledge and skillsets for leadership at all levels of special education. This course will provide and understanding of legally sound policies and procedures to ensure educationally meaningful and legally correct education for students with disabilities.

CASE 90854: Personnel Preparation & Effective Teaching in Special Education 3 s.h.
Prerequisite: CASE 90850
In this course, students will explore current issues and research related to special education program design, curriculum development, course delivery, and evaluation. Further, they will identify evidence-based practices of and develop skills in professional learning, mentoring/coaching, and communities of practice for practitioners in special education and disability services.

CASE 90855: Evidence Based Practices in Special Education 3 s.h.
Prerequisite: CASE 90850
The use of evidence-based practices is at the core of successful practice in special education. In this course, students will examine the concept of evidence-based practice as it has evolved in fields such as medicine. They will also examine the challenge of developing and using evidence-based practices in special education. Emerging technology-based practices will be a focus of this course. Students will be challenged to apply their knowledge of cognitive and behavioral science, learning theory, and instructional technologies to improve programs, services, and supports to ensure access, success, and equity for all students.

CASE 90856: Current Issues in Special Education 3 s.h.
Prerequisite: CASE 90850
This course focuses on contemporary issues in the field of special education. Students will select one or two important topics to study through research review, and lead discussions of the study with peers. Students are required to develop a conference proposal and submit for a presentation. A grant application collaborating with the course instructor and other students is also required.

CASE 90859: Special Topics in Special Education 3 s.h.
Prerequisite: CASE 90850
This special topics course allows PhD candidates in the Special Education specialization to explore timely content, methodologies, and pedagogy that fills a gap in knowledge, skills, or interest. The topics are determined through collaboration between students and specialization faculty based on student needs and interest.

CASE 90890: Dissertation Research 1 to 12 s.h.
Prerequisite: CASE 90803
This course is designed for students in the PhD in Education program who are completed with coursework. Students who are working on the dissertation must enroll in this course. Students will take up to 21 credits total.

CASE 90543: Structural, Cultural and Demographic Displacement in Urban Educational Contexts 3 s.h.
This course will examine the global forces that lead to migration and US immigration policy. Students will explore refugee resettlement in urban contexts and how schools, in collaboration will community groups, refugee agencies, businesses, and religious organizations, provide services to students who have experienced interrupted education, who may suffer from physical and psychological disabilities due to conflict, or who may contend with insecurity at home and in the community. Students will research the differential impact of gender, language, ethnicity, and race on access to quality education and the innovations aimed at servicing displaced people in urban educational contexts. Finally, students will engage with diverse cultural perspectives through interaction with local refugees and displaced persons.

CASE 90718: Research Literature Analysis and Writing in Education 3 s.h.
This course is designed to assist students in reading, interpreting, understanding and digesting research literature as well as to assist students in basic academic writing skills and APA style. Students will learn the function of a literature review in the research process and will learn to synthesize a body of research and write a cohesive literature review.

COUN 26501: Introduction To Counseling And Guidance 3 s.h.
This course provides a comprehensive, introductory overview of the profession of school counseling. It provides students with the philosophical and historical perspectives that serve as a foundation for the school counseling profession. The course also addresses current professional issues such as legislation, associations, certification, licensure, and accreditation. In addition, information will be provided as to the diversity of roles, job outlook, and specializations within the counseling field.

COUN 26509: Group Counseling In Educational Settings 3 s.h.
Emphasis is placed in the design, planning and facilitation of a group. The focus of the class is experiential whereby students learn group facilitation skills while being part of a group process. The course covers basic skills for group leaders, introducing, conducting and processing exercises, kinds of counseling and therapy groups, dealing with problem situations, and multicultural considerations.

COUN 26520: Design And Coordination of Developmental Counseling Programs 3 s.h.
This course provides a thorough exploration of developmental counseling programs to meet students' academic, social-emotional and career development needs. It also discusses how such programs are integral to school educational and preventive programs including collaboration and consultation skills and substance awareness programming.

COUN 26523: Counseling Interviewing Skills And Techniques 3 s.h.
The course explores the nature of counseling and its relationships to theoretical concepts. The course also teaches fundamental counseling skills such as relationship building, basic assessment, goal setting, selection of interventions, and evaluation of client outcomes.

COUN 26524: Assessment And Appraisal Procedures In Counseling In Educational Settings 3 s.h.
An overview of formal and informal assessment and appraisal methods for evaluating student trends in academic, behavioral, socio-emotional and career development and performance in educational settings (K-16). Topics include: psychometric statistics, factors related to the assessment and evaluation of individuals, groups and special populations, case conceptualization, assessment, and diagnosis. The processes of selection, administration, scoring, interpretation, and reporting information from appraisal techniques are examined in relation to practical, legal, and ethical considerations.

COUN 26525: Multicultural Counseling And Advocacy In Educational Settings 3 s.h.
This course provides a thorough explanation of multicultural school counseling. It presents relevant skills in counseling culturally diverse populations, as well as current theories and trends in multiculturalism as they relate to K-12 and post-secondary educational settings. The course addresses current professional issues such as promoting academic achievement and student retention among diverse student groups, working with culturally diverse families, and recognizing cultural influences on student behavior.

COUN 26526: Individual Counseling Procedures 3 s.h.
Coverage of all major counseling theories is provided with an emphasis on developing one's personal counseling philosophy and an integrative approach. Using assigned readings, discussion, and interactive counseling situations, students are provided with opportunities to refine their counseling skills; the "theory to practice" approach is utilized.

COUN 26527: Practicum In Counseling In Educational Settings 3 s.h.
Prerequisites: (COUN 26526 Individual Counseling Procedures and COUN 26529 Counseling Interviewing Skills and Tech and COUNT 26501 Introduction to Counseling and Guidance.
The purpose of this course is to help each student develop effective individual counseling skills which can be used in a multiplicity of settings. Students enrolled in this course will study and apply various contemporary theoretical approaches to counseling through role playing and video taping tecnhiques. A field-based experience of 100 clock hours is required.

COUN 26540: Post-Secondary and College Counseling 3 s.h.
Prerequisite(s): COUN 26582
Through an equity, access, and success lens, this course explores the postsecondary planning and college admissions process, including current issues confronting school counselors and students in exploration, application, and admissions criteria for various types of colleges and college counseling for diverse student populations. The use of technology in the postsecondary and college process will also be explored.

COUN 26550: Introduction to Play Therapy 3 s.h.
This course provides students with the philosophical basis for play therapy, including a review of the history of play therapy, how to develop a relationship with a child, and an introduction to various theoretical applications and best practices. Students will become familiar with play therapy micro-skills, the goals of play therapy, therapeutic stages and themes, ethical issues, treatment planning in play therapy, and cross cultural/ diversity implications.

COUN 26582: Career Counseling In Educational Settings 3 s.h.
This course seeks to develop a conceptual framework of the career development process throughout the life span as well as practical knowledge of the information system in counseling and career counseling procedures. The course covers the major theories of career development, the structure of the world of work, testing and assessment, computer assisted career guidance systems and systematic career development programming.

COUN 26597: Intervention and Referral Services/School Teams and Community Resources 3 s.h.
This course seeks to develop effective individual counseling skills which can be used in a multiplicity of settings such as school counseling, student assistance coordination, and higher education advisement. Students enrolled in this course will study and apply various contemporary theoretical approaches to counseling through direct supervision in educational and applied settings. A field experience of 100 clock hours is required under the supervision of an appropriately credentialed supervisor.

COUN 26601: Internship In Counseling In Educational Settings 3 s.h.
Prerequisites: COUN 26520 and COUN 26509and COUN 26526 and COUN 26501 andCOUN 26527 and COUN 26582
Internship I in Counseling/Student Personnel Services is one of the culminating field-based experiences for matriculated students taken during the final Fall semester of one's program. Students spend a minimum of 300 clock hours throughout each semester at their selected internship site for a maximum of 600 clock hours in one academic year. Emphasis is placed upon gaining direct experiences and actually participating in all phases of student services. Internship students work under the direction of an on-site mentor, and a college-faculty supervisor. Internship students attend topical seminars on campus.

COUN 26603: Research And Evaluation Procedures In Counseling In Educational Settings 3 s.h.
Prerequisites: COUN 26520 and COUN 26509 andCOUN 26526 and COUN 26501 and COUN 26527and COUN 26582
Research and Evaluation Procedures in Educational Settings will provide opportunities for students to conduct focused inquiry and to generate knowledge around those factors germane to the field of counseling. During this course, students will begin an action research thesis project focusing on school-counseling program reform, with emphasis on systems change processes, needs assessment, goal setting, and data gathering processes.

COUN 26605: Special Topics in Counseling in Educational Settings 1 to 3 s.h.
This course is a series of three 1 Semester Hour seminars designed to explore and discuss current issues in counseling. Selected topics include adventure learning, (ropes course), loss and bereavement, communicating for intimacy, and existential thought and spirituality.

COUN 26606: Ethics, Leadership, and Advocacy 3 s.h.
Prerequisite(s): COUN 26501 and COUN 26523 and COUN 26526
This course will familiarize students and mental health professionals with the history and development of professional ethics, standards, legal policies, case law, and implications for educational and community counseling settings.

COUN 26607: Children and Adolescent Counseling in Schools and Communities 3 s.h.
Prerequisite(s): COUN 26526 and COUN 26523
This course will consist of advanced counseling theories and advanced counseling skills and techniques with children and adolescents. The emphasis will be on a multidimensional view of interventions with children and adolescents, giving specific attention to developmental, cognitive, behavioral, educational, social, and environmental issues.

COUN 26608: Diagnosis in Educational Setting 3 s.h.
The purpose of this course is to introduce students to the etiology and classification of common mental disorders in educational settings as defined by the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5). Students will learn to utilize diagnostic information to facilitate the initiation and implementation of the Multi-Tiered Systems of Support and the collaboration with other education and healthcare professionals.

COUN 26650: Mental Health Awareness and (Emotional) Crisis 3 s.h.
The purpose of this course is to provide current educators, professionals, and administrators in P-12 and higher educational settings with an overview of mental health, how behaviors may present in schools, learn individual and systemic educational preventions and interventions, and explore policies and ways to handle crisis management within the context of emotional safety.

COUN 26651: Trauma Informed Practices for Social Emotional Development in Educational Settings 3 s.h.
The purpose of this course is to provide current educators, professionals, and administrators in P-12 and higher educational settings with an overview of trauma informed practices that support the social emotional development of all students. Students will explore the core tenants of social emotional development and how to address systemically, as well as through individual classrooms and content areas.

COUN 26652: Neurodiverse Learning and Social Emotional Development in Educational Settings 3 s.h.
The course offers current educators, professionals, and administrators in P-12 and higher educational settings with an overview of neurodiverse learners in educational settings and how to support their academic social emotional development.

COUN 26653: Promoting Self-Care and Wellness in Educational and Professional Settings 3 s.h.
This course will explore strategies to promote self-care and wellness for individuals and how to maintain wellness while studying and/ or working in educational and professional settings. Additionally, this course will provide resources and strategies for implementing wellness programming within the professional and educational context. This course will be taught by trained educational counselors.

CURR 29503: Teaching Adult Learners 3 s.h.
The general purpose of the course is to help participants become better instructors of adults. The course focuses on proven methods and techniques for teaching adults in a variety of settings. Special attention will be paid to the individualizing instruction process. Course participants will strengthen both theoretical and practical understandings of the adult learning process, study methods and techniques for teaching adults, and critically reflect on their own instructional efforts.

CURR 29504: Understanding Adult Learning And Development 3 s.h.
The general purpose of the course is to introduce participants to the processes of adult development and learning. The course examines the social, psychological, economic, and cultural dimensions of learning in adulthood as well as the application of theory and research findings to adult learning situations. Special attention will be paid to the concept of learning how to learn. Course participants will be invited to undergo a series of thinking style and learning style profile tests and then analyze the results in an effort to improve learning performance.

EDAM 27505: Selected Topics In Educational Leadership 1 to 6 s.h.
This course explores one or more topics of importance in the field of educational leadership. The focus will be different each time that the course is offered.

EDAM 27510: Change For School Improvement 3 s.h.
This advanced course in school leadership enables students to better understand the change process, further developing their analytic skills for improving the teaching and learning process. This course is offered annually and includes a field experience component.

EDAM 27521: Introduction To The Principalship 3 s.h.
The essence of school administration is the ability to supervise and manage the school organization, including its personnel, resources, and operations. In this course, students learn and demonstrate the supervisory and management skills necessary to use data-driven decision-making strategies to create an effective school culture and climate, supervise and manage school personnel and plant, supervise the application of instructional and informational technology, supervise scheduling and business procedures, and advocate for school resources among community and service agencies in ways that give priority to student learning, safety and security, and curriculum and instruction. Effective communications skills are emphasized.

EDAM 27525: INDEP STUDY-ED LEADERSHIP 1 to 6 s.h.

EDAM 27535: School Finance And Records 3 s.h.
Students learn and demonstrate the ability to develop budgets, apply principles of financial management, budget management. Students study how schools are supported financially. This course includes a field experience component.

EDAM 27536: Financial Accounting For School Systems 3 s.h.
This course will provide students with the knowledge and skills required to initiate and maintain a school district accounting program. The course will emphasize--but not be restricted to--the laws and procedures relative to New Jersey school accounting. This course includes a field experience component.

EDAM 27538: School Business Management 3 s.h.
This course is designed to provide graduate students with an introduction to the skills, concepts, and insights necessary for the school business administrators to manage, as members of the administrative team, increasingly complex schools to obtain the greatest educational return for each tax dollar expended. This course includes a field experience component.

EDAM 27559: Law And Ethics For School Leadership 3 s.h.
Students study and understand and demonstrate the ability to identify legal issues involved in personnel administration, school district government and operation, state aid, handicapped children and student rights. Includes a study of the legal structure of the New Jersey school system.

EDAM 27600: Practicum/Seminar In Administration/Supervision I 3 s.h.
Prerequisite(s): EDSU 28546 and EDAM 27535 and EDSU 28510 and EDAM 27510 and CURR 29590 and EDAM 27521 and EDSU 28522 and EDST 24504 and EDAM 27559 and EDSU 28523
An administrative internship to reinforce and practice administrative and supervisory competencies, in cooperation with a school district, is required. Students apply human relations skills, apply decision-making skills, articulate ethical beliefs and values and apply various leadership theories. Students also demonstrate group process abilities such as shared decision-making, group motivation, conflict resolution, and planning and conducting effective meetings. A project report is required integrating research findings with selected field projects. Written and oral communication and community relations skills are emphasized.

EDAM 27601: Practicum/Seminar In Administration/Supervision II 3 s.h.
Prerequisite: EDAM 27600
An administrative internship to reinforce and practice administrative and supervisory competencies, in cooperation with a school district, is required. Students apply human relations skills, apply decision-making skills, articulate ethical beliefs and values and apply various leadership theories. Students also demonstrate group process abilities such as shared decision-making, group motivation, conflict resolution, and planning and conducting effective meetings. A project report is required integrating research findings with selected field projects. Written and oral communication and community relations skills are emphasized.

EDAM 27610: Human Resources For School Systems 3 s.h.
Analyzes the legal developments and trends in collective negotiations in the public sector. Topics to be developed are the process of effective negotiations, organization rivalries, grievance procedures, the impasse and the comprehensive agreement. This course may not be offered annually. It includes a field experience component.

EDAM 27620: Legal Issues In Higher Education 3 s.h.
This course examines the legal principles that guide the administration of higher education. Students will study current and emerging legal issues in higher education, focusing primarily on student rights, student life, and general administration legal concepts.

EDAM 27621: Student Services In Higher Education 3 s.h.
This course traces the historical development of student services and examines the philosophy and rationale for current student services. Reflecting upon the demographic trends affecting higher education, students consider the extent to which the nature, scope, and delivery of services should be changed to meet emerging needs.

EDAM 27622: Planning And Resource Allocation In Higher Education 3 s.h.
This course will teach students practical approaches to strategic and operational planning in higher education, as well as how to develop budgets that are driven by institutional mission and that support the institutional plan.

EDAM 27623: Diversity In Higher Education 3 s.h.
The purpose of this course is to provide students with an in-depth exploraton of diverse populations on college campuses. Students will utilize a broad view of diversity, including race, ethnicity, gender, religious and spiritual values, sexual orientation, socioeconomic status, disability status, and age, as well as unique characteristics of various ethnic and cultural groups that affect college students and campuses. This course will provide students with relevent skills and understanding of current theories, models, and issues within diverse populations and community building on diverse campuses. The readings, discussions, and assignments are intended to provide information for student affairs professionals, administrators, or faculty members.

EDAM 27624: College Admission And Transition 3 s.h.
Prerequisites: HIED 06605 or EDAM 27737 or COUN 26526 or COUN 26520
This course provides an overview of admissions processes in higher education in the United States and incorporates service learning to assist high school students' college search/application processes. Through the service learning experience, students completing the course will have a fuller understanding of issues in admissions, including diversity and equity issues, and how these issues affect students applying to colleges. The topics covered include the admission process, stratification in postsecondary attendance patterns, college counseling, service learning, establishing and maintaining appropriate relationships, as well as the role of reflection in service learning. Particular attention is paid to issues of campus diversity and equitable access to postsecondary education. The readings, discussions, and assignments are intended to provide information for student affairs professionals, school counselors, administrators, or faculty members. All students will be required to complete a fingerprinting and background check process.

EDAM 27625: Change In Higher Education 3 s.h.
This course will focus on the change process both theoretically and practically. Each student will undertake an action research project that will serve as the basis for the thesis. A complete first draft of the thesis will be required by the end of this course.

EDAM 27628: Seminar/Internship In Higher Education Administration I 3 s.h.
This course is the first of a two course sequence which is intended to serve as the capstone experience for the M.A. program in higher education. Students will utilize a workplace in a higher education setting as a laboratory to study the application of higher education administrative theory to practice and to begin work on a major capstone research project.

EDAM 27629: Seminar/Internship In Higher Education Administration II 3 s.h.
This course is the second of a two course sequence which is intended to serve as the capstone experience for the M.A. program in higher education. Students will utilize a workplace in a higher education setting as a laboratory to study the application of higher education administrative theory to practice and to complete work on a major capstone research project.

EDAM 27630: Academic Advising in Higher Education 3 s.h.
Prerequisite(s): None
The purpose of this course is to provide students with an in-depth exploration of academic advising on college campuses. Students will gain a broad view of the role and function of academic advising. Specifically, students will learn about the historical development of academic advising; the role of academic advising in the multiple academic settings (community colleges, four year universities, special mission institutions); and how to assist students in planning their academic processes. This course will provide students with relevant skills and understanding of current research, models, and considerations for working with diverse and special populations. The readings, discussions, and assignments are intended to provide

information for student affairs professionals, administrators, or faculty members.

EDAM 27637: Higher Education Administration 3 s.h.
This course introduces students to the fundamentals of administration in the higher education setting. Topics include authority and power, implementation of institutional policy, decision-making in higher education, conflict resolution, staff supervision, and program assessment.

EDAM 27704: Changing Organizations 3 s.h.
This course focuses on the development of leadership skills that will provide students with the ability to implement change in schools and colleges. Specific topics will involve students in the study of organizational and social change, intervention theory, organizational design, group dynamics, interpersonal communication, and the use of self in leadership.

EDAM 27714: Planning And Negotiating 3 s.h.
This course teaches students to set organizational direction with specific goals and objectives to produce an integrated system of decisions regarding strategies, sub-strategies, programs and budgets that will accomplish the goals of the objectives. The course also focuses on the leadership role of creating mutual understanding and agreement among people and groups who may have fundamental differences of opinion.

EDAM 27719: Dissertation Seminar I 3 s.h.

EDAM 27720: Dissertation Seminar II 3 s.h.
Prerequisite: EDAM 27719
This course is intended to assist students as they develop their dissertation proposal and prepare for the Benchmark II, the dissertation proposal defense. Students will draft Chapters 1, 2, and 3 under the guidance of Educational Leadership Faculty members.

EDAM 27733: The Policy Environment 3 s.h.
Educational leaders must understand the policy environment within which they operate in order to equip them to resolve goal conflicts between education and its environment. This course teaches the skills to develop alternative choices to advance education. Topics include economic, political/legal, social, and science/technology policy, as well as cross-cutting issues such as entitlements, privatization, decentralization, deregulation, use of incentives, and funding of mandates.

EDAM 27735: Promoting Effective Learning 3 s.h.
In this course, students apply leadership skills through examination and analysis of learning and instruction in their school contexts. The course focuses on examining learning theories, identifying the ways in which certain patterns of activity and interaction promote learning, and applying theories to analyze learning environments. Students also use theoretical perspectives to consider the impact of educational reform and to understand how other social, political, economic, legal, and cultural factors can impact learning.

EDAM 27737: The College Student: Issues And Support Programs 3 s.h.
This course includes the study of student development and academic support in different types of institutions of higher education. Emphasizing the role of the leader, the course studies the rationale, goals, objectives, policies and organizations of selected programs of student services, as well as models for program development and assessment.

EDAM 27741: Current Issues In Higher Education 3 s.h.
This course will have a changing focus that will permit faculty to offer specialized seminars focusing on new developments in the field, on issues of significance where advanced specialization would be helpful to educational leaders, on areas of faculty research and scholarship, or in response to student requests. Multiple sections of this course, each focused on a different topic, may be offered during a semester. Students may take this course for elective credit more than once, as long as the theme of the course is different each time that the student enrolls.

EDAM 27742: The Curriculum Of Higher Education 3 s.h.
This course will examine differences of mission and resulting curricular offerings between types of higher education institutions, external and internal influences that influence the curriculum, the components of curriculum, the curriculum development process, appropriate strategies for curriculum assessment, and contemporary curricular issues.

EDAM 27746: Higher Education Governance 3 s.h.
This course will examine the layered approach to institutional governance, focusing on existing federal higher education policy, the various models of state-level higher education coordination, the function of boards of trustees, and the process of campus decision-making. Students will analyze the role of federal, state, county (if applicable), and campus policy-makers on a specific campus program.

EDAM 27748: Human Resource Development 3 s.h.
This course focuses on improving the performance of the organization through a proactive human resource development effort. It will stress the responsibility of leaders to assist staff through coaching, appraising performance, providing advice, and eliminating barriers to development.

EDAM 27749: Issues In School Governance 3 s.h.
This course identifies current issues in school governance and provides students with the understanding of how the issue develops, those instrumental in promoting the issue, and the ramifications that issue could have for the educational systems and its leader. It will focus in part on the relationships among the educational leader, the school, and state-level authorities. The course will help students to develop their understanding of the role of the educational leader as spokesperson seeking to influence the resolution of issues of school governance.

EDAM 27750: Applied Ethics Of Educational Leadership 3 s.h.
This course will enable students to examine multiple ethical paradigms, to understand the Professional Code of Ethics for educators, to determine one's own code of ethics, and to develop a model for ethical decision-making.

EDAM 27752: Advanced Leadership 3 s.h.
Prerequisite: minimum grade of B in EDST 24720
This course provides students enrolled in the doctoral program with a capstone seminar experience that is designed to synthesize the various facets of leadership, organizations and change in a way that will enable students to view issues related to these topics at a critical/deeper level of analysis while working on the dissertation. Specifically, students will be able to formulate, articulate and design a method to study their personal theory of leadership in action. The course will place special emphasis on issues of contemporary leadership in times of organizational and social turbulence.

EDAM 27780: Community College Leadership And Governance 3 s.h.
This course further develops topics taught in the overview course, The American Community College. It explores topics introduced in the first course such as community college governance and leadership in greater depth, paying particular attention to the governance activities that are the priority of community college presidents such as accountability, accreditation, the role of the federal government, the State and the relationship with the county and the board of trustees.

EDAM 27781: Community College Budgeting And Finance 3 s.h.
Prerequisites: EDAM 27782 and EDAM 27780
This course will provide an overview of community college budgeting and finance. It will review the budgeting process in New Jersey and the economic and policy context of budgeting decisions for New Jersey community colleges. There will be a focus on recognizing the fiscal constraints in which community colleges function and the various sources of funding. Students will also gain an understanding of how planning and budgeting processes are related. This course will be applied in nature, drawing upon current community college budgets.

EDAM 27782: The American Community College 3 s.h.
This course provides an overview of the history of the American Community College movement and then examines current issues in light of that history. In addition, the course explores the mission and work of community colleges including current organizational, social, economic, educational, and political challenges and opportunities facing these uniquely American institutions.

EDAM 27783: Student Development And Adult Learning Theory 3 s.h.
Students enrolled in this course will trace the historical foundations of student development theory and adult learning and development theory in higher education with a focus on traditional student and non-traditional student populations. The course will also provide students with models and techniques that guide the practice of student services administration.

EDAM 27784: Introduction to the Community Colleges 1 s.h.
This course is designed to introduce those new to the community college to its history and mission. In particular, it will serve as an introduction to American community colleges and their leadership needs. Students will develop a basic understanding of community colleges role in the postsecondary education sector, their organizational and governance structures, and the current issues facing community colleges.

EDAM 27790: Instructional Leadership And The Curriculum 3 s.h.
This course provides students enrolled in the doctoral program with learning experiences related to Instructional Leadership. Examining in depth the current "best practices," candidates will analyze the role of Instructional Leadership and curriculum. Specifically, candidates will be able to align curriculum to standards, examine potential best practices, and use assessment data to improve learning. The course will place special emphasis on how instructional leadership contributes to student learning.

EDST 24501: Procedures And Evaluation In Research 3 s.h.
The course helps students develop an understanding of research and statistics sufficient to enable them to read and evaluate research, and develop and carry out full scale research projects.

EDST 24503: Quantitative Analysis In Educational Research 3 s.h.
This introductory course is designed to assist educators in the design and implementation of research projects using quantitative methods of analysis. Using a decidedly applied approach, educators will learn how to use computerized statistical analysis programs in conducting quantitative data analyses. Further, they will learn how to compute and interpret statistics of varying types, including t-tests, F tests, r tests, chi-square and other assorted parametric and non-parametric tests of significance.

EDST 24504: Action Research In Education 3 s.h.
This introductory course introduces students to the cyclical and recursive approaches to action research. Students will engage in reflective practice and will complete an action research project in an appropriate educational setting.

EDST 24707: Applied Analysis For Educational Leadership 3 s.h.
This is an intermediate course in quantitative (statistical) analysis with emphasis upon three broad areas: applying correct statistical procedures for data analysis; using automated approaches to hypothetical testing and quantitative analysis, and using intermediate-level statistical procedures in educational inquiry. The course is expected to provide practical knowledge for use by educational leaders to support administrative decisions.

EDST 24709: Issues In Survey Research 4 s.h.
This course teaches methods for designing and implementing survey research, including how to choose a valid sample, handcraft survey instrumentation, avoid non-response bias and other threats to the validity of the survey, and analyze and communicate survey results validly and effectively.

EDST 24721: Action Research In Educational Leadership 3 s.h.
Prerequisite: Matriculation into the EducationalLeadership Doctoral Program
This course introduces doctoral students to the action research design. Students will identify a problem in practice, research the problem, and then develop and implement an action research design methodology to address the problem.

EDST 24724: Issues In Qualitative Analysis In Educational Research 3 s.h.
This course assists the student in preparing an acceptable dissertation proposal. Topics include alternative approaches to conducting dessertation research, designing an effective study, and recognizing and avoiding common difficulties encountered in dissertation research.

EDST 24725: Mixed Methods Research In Educational Leadership 3 s.h.
Prerequisite: EDST 24721 and EDST 24724
This course introduces students to mixed methods research approaches in education, a contemporary approach to the complex problems in the field of education today. Students will explore qualitative and quantitative methods and develop an understanding of how to read, design, conduct, and synthesize mixed methods research. Students will also practice understanding and evaluating data and research to support their decisions.

EDST 24795: Dissertation Research 1 to 12 s.h.
This is a 12 credit independent research project to be conducted in conformity with the student's dissertation proposal that has been approved by the student's doctoral committee. Students may register for all 12 credits at once or may register in four credit increments for three consecutive semesters including summer. Dissertations must be completed within three years of passage of the second benchmark.

EDST 27801: Leadership for Social Justice 3 s.h.
The focus of this course is on preparing students to understand and address the plight of social and educational inequities in educational settings. Student will critically analyze the historical perspective of inequities and the presence of systematic structures and policies that maintain inequality in American schooling. Students will also engage in studying social justice leadership paradigms that eradicates injustice and fosters inclusive learning environments.

EDST 27802: Inquiry I: Theory to Practice 3 s.h.
This course focuses on the application of theoretical and social justice frameworks to problems of practice. Students will explore appropriate research designs for the investigation of individual-level problems of practice and apply relevant data collection, analysis, and quality approaches to a problem within their sphere of influence and role. This course specifically supports students' application of a social justice framework to local problems of practice.

EDST 27803: Reforming Organizations 3 s.h.
Prerequisite(s): EDST 27801 AND EDST 27802
This course focuses on preparing students to become familiar with the foundational literature on organizations and organizational change in order to work more effectively within organizations to improve social justice and equity. The course will explore interdisciplinary conceptions of the organization, organizational theories, and organizational change. This course supports students' familiarity of the change process to prepare them to apply these ideas to program assessment and evaluation within a social justice framework.

EDST 27804: Inquiry II - Program Evaluation 3 s.h.
Prerequisites: EDST 27801 AND EDST 27802 AND EDST 27803
This course focuses on preparing students to systematically collect and use data as part of the process of program evaluation in order to improve social justice and equity. The course will explore appropriate research designs for the investigation of program-level problems of practice and address relevant data collection, sampling, analysis, and quality approaches. This course supports students' application of a change process to systematic inquiry for program improvement within a social justice framework.

EDST 27805: Public Policy, Ethics, and Contemporary Issues 3 s.h.
Prerequisite(s): EDST 27801 AND EDST 27802 AND EDST 27803 AND EDST 27804
This course is designed to survey major policy issues facing educators in the 21st century. This course emphasizes how federal and state educational policy plays a role in the local educational landscape, as well as the ethical implications of such policies.

EDST 27806: Inquiry III: Policy Inquiry, Analysis, and Entrepreneurship 3 s.h.
Prerequisite(s): EDST 27801 AND EDST 27802 AND EDST 27803 AND EDST 27804 AND EDST 27805
The purpose of this course is to fundamentally empower students to engage in informed and systematic inquiry and analysis of public policy in education as scholar-practitioners. The course seeks to enable students to identify problems of practice and engage in policy inquiry that explores the roles of policy communities and networks in education. Finally, the course will assist students in seeing their potential to influence policymaking and understand the importance of public policy research to their roles as educational leaders.

EDST 27807: Sustainable Institutional Change 3 s.h.
Pre-requisites: EDST 27801, EDST 27802, EDST 27803, EDST 27804, EDST 27805, and EDST 27806
This course builds on the work accomplished in Reforming Organizations (EDST 27803). It provides a framework for students' to continue to develop transformational leadership approaches that lead to sustainable organizational change.

EDST 27808: Inquiry IV - Inquiry for Improvement 3 s.h.
Prerequisites: EDST 27801 AND EDST 27802 AND EDST27803 AND EDST 27804 AND EDST 27805 AND EDST 27806 AND EDST 27807
This course first reviews improvement science and systems thinking approaches for organizational improvement and then provides students opportunities to practice designing and testing a small-scale change at their workplace using the above approaches to solve the problem of practice related to social justice, diversity, equity, and inclusion. Students will explore appropriate research designs to measure outcomes and collect data, analyze the extent to which the change is related to outcome variations, and propose necessary modifications in the small-scale change for a whole-scale implementation.

EDST 27809: Introduction to Writing a Research Literature Review 3 s.h.
Prerequisite(s): EDST 27804
This course is designed to assist students in reading, interpreting, understanding and digesting research literature as well as to assist students in academic writing skills and APA style. Furthermore, students will learn the function of a literature review in the research process and will learn to synthesize a body of research and write a cohesive literature review. Specifically, the course has six objectives: familiarizing students with different research methodologies, approaches, and paradigms; increasing students' ability to read and utilize research literature; increasing students' understanding of the role of research literature in the research process; having students learn how to locate, read, and synthesize research literature into a literature review; having students learn APA style; and improving students' academic writing skills.

EDST 27810: Leader Scholar Community I 3 s.h.
Prerequisite: EDST 27809
This course focuses on preparing the student to engage in the dissertation process in the Ed.D. in Educational Leadership. The course will include understanding the purpose and role of the dissertation in the Ed.D., reviewing the different forms the dissertation may take, the process of project conceptualization and development, and the importance of establishing a networked community to facilitate student success. The course also seeks to assist students in transitioning into the discourse community of our profession.

EDST 27811: Leader Scholar Community I 3 s.h.
Prerequisite(s): EDST 27809 and EDST 27810
This course continues to prepare students to engage in the dissertation process in the Ed.D. in Educational Leadership. The course objectives will include understanding the purpose and role of the dissertation in the Ed.D., reviewing the different forms the dissertation may take, the use of different research designs, and the importance of establishing a networked community to facilitate student success. The course also seeks to assist students in identifying and developing an appropriate research design for their dissertation.

EDST 27812: Leading Scholar Community III 3 s.h.
Prerequisite(s): EDST 27809 and EDST 27810 and EDST 27811
This course continues to prepare the student to engage in the dissertation process in the Ed.D. in Educational Leadership. The course will include understanding the purpose and role of the dissertation in the Ed.D., reviewing the different forms the dissertation may take, the use of different research designs, conceptualizing and framing students' dissertation projects, and the importance of establishing a networked community to facilitate student success. The course will guide students in finalizing their topic, creating their conceptual framework, and making methods decisions for their dissertation study.

EDST 27820: Educational Leadership for Equity and Diversity 3 s.h.
This course teaches issues of diversity and equity within the student body and the workplace. This course presents theoretical scholarship and practical strategies on how educational leaders might overcome the challenges in this regard. Students will examine and question the structural, policies, practices and historical and contemporary conditions that create and perpetuate a culture of inequity in existing structures. The course will stress the essential role that school leaders play in ensuring the academic success of all children, regardless of race, ethnicity, gender, ability, sexual orientation, age, language, religion, or socioeconomic status.

EDST 27821: Instructional Leadership 3 s.h.
This course introduces students to the processes of curriculum building and instructional design within a social justice framework. It provides students a historical foundation of curriculum and an opportunity to analyze curriculum, identify social justice issues, and design a change to address them. It also introduces students to the literature on learning sciences to identify best instructional practices.

EDST 27822: Equitable Finance and Budgeting 3 s.h.
This course examines the issue of school funding gaps that persistently exist in the country. Students will learn histories of school funding gaps from perspectives of equity, adequacy, and social justice and understand how these gaps lead to systematic gaps in opportunities to learn and academic achievement. Students will study how to analyze and identify funding gaps, make equitable resource allocation to narrow these gaps, and evaluate/assess its outcomes using a cost-effectiveness analysis framework.

EDST 27823: Building Board and Community Relationships 3 s.h.
This course is designed to provide students with strategies necessary to engage stakeholders in the school community including members of parent-teacher associations, local community organizations, parent organizations, and local school board members. Specifically the course will address the school leader's role in influencing the school boards and other educational associations. Additionally, students will develop strategic plans and public relation frameworks that foster community engagement.

EDST 27830: Curriculum Development and Instructional Design 3 s.h.
Prerequisite: EDST 27801
This course addresses systematic ways of constructing and implementing curricula that meet the needs of nurse educators; it further addresses instructional design that accounts for social justice issues.

EDST 27831: Assessment and Evaluation for Nurse Educators 3 s.h.
Prerequisite(s): EDST 27830
This course introduces nurse educators and leaders to the processes of assessment and evaluation in nursing education within a social justice framework. The course addresses the following: general principles of assessment and evaluation in nursing courses; aligning assessment and evaluation with the competencies for nurses laid out by professional organizations (e.g., National League for Nursing); nurse educator skills in conducting assessments; conducting effective program evaluations and consequent programmatic decision making.

EDST 27840: History and Context of American Higher Education 3 s.h.
This course is intended to provide a comprehensive introduction to American higher education for current and future college and university leaders and administrators. Specifically, the course will provide students with an overview of historical trends, traditions, policies, and current practices that both shape and impact American higher education as we know it today.

EDST 27841: Higher Education Governance and Leadership 3 s.h.
This course provides fundamental knowledge about the various structures of governance in higher education and their controversies. Students will gain an understanding of the roles of faculty, students, staff, administrators, governing boards, and governmental agencies, as well as how funding impacts governance. Students in this course will also explore leadership and governance.

EDST 27842: Legal and Administrative Issues in Postsecondary Education 3 s.h.
The purpose of this course is to provide students with an overview of contemporary legal and administrative issues that are pertinent to postsecondary education institutions. It will provide students with relevant historical context and literature so that they have a foundation understanding of these higher education issues. The course will enable students to have a better understanding of how legislation affects how students, faculty, and administration function within public and private institutions.

EDST 27843: Leadership and Advocacy for Student Success 3 s.h.
This course provides students with an understanding of the demographics of today's college students and their diversity. The course recognizes traditionally marginalized student groups and explores strategies for the success of all students. Supporting today's students also requires trauma-informed practice for college faculty and staff. The course addresses the deliberate assessment and accountability for social justice that are necessary for the enactment of inclusive campuses.

EDST 27850: History and Context of American Community Colleges 3 s.h.
This course provides students with an overview of the community college sector, its origins, and its role in today's postsecondary landscape. The course introduces students to the multiple missions and stakeholders of this uniquely American institution and as such, provides leaders with insights into its inherent tensions. It explores the social, economic, and political context of public community colleges.

EDST 27851: Community College Governance and Leadership 3 s.h.
This course explores governance structures in public community colleges. Students will gain an understanding of the roles of faculty, students, staff, administrators, governing boards, and governmental agencies, as well as how funding impacts governance. The course will also explore the relationship between leadership and governance.

EDST 27852: Legal and Administrative Issues in Community Colleges 3 s.h.
This course provides students with an overview of contemporary legal and administrative issues pertinent to community colleges. The course will familiarize students with the influence of legislation on how students, faculty, and administration function in two year colleges. Finally, the course addresses current legal issues that today's community college leaders must understand.

EDST 27853: Leadership and Advocacy for Community College Student Success 3 s.h.
This course provides students with an understanding of the demographics of today's community college students. The course recognizes the role that community colleges play in providing access to higher education, particularly for traditionally marginalized student groups and explores best practices and national initiatives promoting community college success. Topics include community college student demographics and unique populations (e.g. commuter students and dual enrollment students), student engagement and integration, and inclusive campuses for traditionally marginalized students. Success is also considered in light of trauma-informed practice for community college faculty and staff. The course addresses the unique assessment and accountability for social justice that are necessary for the enactment of inclusive campuses.

EDSU 28510: Curriculum Design & Development for Instructional Leaders 3 s.h.
This course provides instructional leaders with an understanding of curriculum design and development from the perspective of Instructional leadership. Particular attention is focused on understanding various curriculum models, the process of curricular articulation and coherence, the relationship between curriculum and Instructional leadership and student outcomes as well as aligning curriculum with learning goals.

EDSU 28511: Leading Curricular Implementation & Assessment for School Improvement 3 s.h.
Prerequisite: EDSU 28510
This course provides instructional leaders with an understanding of curriculum implementation and assessment and the tools to utilize the curriculum implementation and assessment process to improve schools and student learning outcomes.

EDSU 28522: Instructional Leadership And Supervision 3 s.h.
In this course, students focus on the knowledge, skills, and dispositions essential for instructional leadership and the supervision of educational activities and programs. Topics include program planning, staff selection and mentoring, curriculum development and evaluation, analyzing teaching and interpersonal supervisory strategies, collaborative program development, practicing value-added leadership and supervision, reflective practice, understanding the need for diversity in teaching and learning, and communication. This course also includes a field experience component of approximately 25 clock hours in which students apply theory to practice.

EDSU 28523: Building Organizational Capacity 3 s.h.
This advanced course in school leadership enables students to practice the cyclical and recursive approach to action research. Students will engage in reflective practice and will complete an action research project in an appropriate educational setting related to the teaching and learning process. This course is offered annually and includes a field experience component.

EDSU 28546: Educational Organizations And Leadership 3 s.h.
In this course, students will demonstrate an understanding of organizational theory that underlies effective leadership and supervisory behaviors in P-12 environments. Students will further demonstrate that they can analyze and supervise school and programmatic activities, nurture and supervise a vision for improvement in teaching and learning, lead and supervise change, support staff development, and use effective supervisory skills. Other topics include the history and philosophy of school leadership and supervision, effective schools, effective teaching, and the future of school leadership and supervision.

EDSU 28602: Field Service In Supervision: District Internship 1 to 6 s.h.
This course is designed to respond to the needs of school administrators and supervisors for developing effective supervisory skills. The content for each course offering will be determined after a local analysis of needs has been conducted. Semester hour credit will be assigned prior to registration.

EDSU 28706: Diversity And Educational Leadership 3 s.h.
This course deals with diversity both among the student body and the workforce. It addresses the ways that people are alike and explores issues of difference. It focuses on the power that valuing difference can have in establishing quality interpersonal relations, in taking advantage of the cultural richness that can result from diversity, and in creating mutual respect among groups. It examines how the educational leader might overcome resistance to change in this regard.

EDSU 28715: Leadership Theory 3 s.h.
This course is the foundation course for the Doctoral Program in Educational Leadership. Leadership will be defined, demystified, and distinguished from management and administration. The roles and expectations of leaders will be explored, and the competencies required for leadership will be identified. Issues of power, authority, and ethics are studied.

HIED 06603: Seminar/Internship In Higher Education Instruction 4 s.h.
The goal of this seminar is to prepare students to teach in a higher education setting in selected areas by engaging them in a comprehensive instructional internship in a cooperating institution of higher education. The seminar will provide the opportunity to explore best practices in instruction and to reflect on the internship experience.

HIED 06605: Higher Education In America 3 s.h.
This course focuses on issues and trends within higher education regarding institutional mission, the student body, curriculum, faculty, student services, governance, administration, finance, and community service (including economic development). The course will examine the challenges and opportunities confronting higher education.

HIED 06606: Selected Topics In Higher Education 3 s.h.
This course explores a topic of importance in the field of higher education. The focus will be different each time that the course is offered. Examples of courses that might be offered include: Crisis Management, New Directions in Financial Aid; Outcomes Assessment; Distance Learning; State Higher Education Systems; Federal Policy and Higher Education; Student Activism.

HIED 06609: Effective Teaching in Academic, Corporate, and Government Settings (3 S.H.) 3 s.h.
Co-listed as ENGR 01.601 Effective Teaching in Academic, Corporate, and Government Settings.
The purpose of this course is to provide students with an in-depth exploration of effective teaching practices in academic, corporate, and government settings. Students gain a broad view of the role and function of teaching and oral presentation, as well as how to communicate effectively in these settings. Specifically, the course introduces instructional methods and strategies, adult learning theory and implications for effective teaching, documenting and assessing student learning, and how to improve instruction in academic, corporate, and government settings. Several real-world scenarios are discussed and simulated, including preparing academic courses and corporate training packages, assessing audience background and setting appropriate technical rigor and level, building classroom/meeting room/ presentation room management skills, conflict avoidance and resolution in such settings, effective strategies for delivering technical content at meetings and conferences, and answering audience questions that may be adversarial in nature. The course provides readings, discussions, assignments, and most importantly ample opportunities for practice teaching, including a semester-long apprenticeship with experienced faculty, allowing students to experience all aspects of teaching and classroom management.
Co-listed as ENGR 01.601 Effective Teaching in Academic, Corporate, and Government Settings (3 S.H.)

HIED 06610: Assessment and Evaluation in Health Professions Education 3 s.h.
Prerequisite(s): CURR 29503 and EDAM 27742
This course introduces medical school faculty members and other health professionals to assessment and evaluation in health profession education, including a focus on student learning outcomes and program evaluation to enhance the curriculum. The ability to utilize data to make decisions on students' progress, on curricular alignment, on course and program learning goals, and on improving student and programmatic outcomes are critical to the success of health professions educators. Students will learn multiple approaches for assessment and evaluation, hot to operationalize learning goals for effective assessment and evaluation, how to utilize multiple assessment tools and approaches, how to develop assessment and evaluation plans, and how to utilize assessment and evaluation data in decision-making.

HIED 06611: Applied Instructional Techniques and Practices 3 s.h.
Prerequisite(s): HIED 06610
This course provides an opportunity for medical school faculty members and other health professionals to develop their skills as master teachers by enganing in project-based demonstrations of their ability to create learning experiences for diverse learners in multiple contexts, including large and small group sessions, clinical settings, and simulations. This course synthesizes previous coursework from Teaching Adult Learners, The Curriculum of Higher Education, and Assessment and Evaluation in Health Professions Education and provides opportunities to apply this knowledge.

HIED 06612: Organizational Development: Understanding the Structure/Function/Cultures of Health Organizations 3 s.h.
Prerequisite: EDSU 28715
This course provides an opportunity for medical school faculty members and other health professionals to develop their skills in organizational development as pertaining to health professions organizations. The course focuses on understanding different models and functions of organizational structures. Additionally, the course includes a focus on understanding how organizational cultures develop, and developing the ability to apply various models to promote organizational development.

HIED 06613: Professional Development: Promoting a Culture of Continuous Improvement in Hlth Organizations 3 s.h.
Prerequisites: EDAM 28715, HIED 06612, EDAM 27625
This course introduces medical school faculty members and other health professionals to continuous improvements in organization through mentorship and professional development in health professions education. The course builds on earlier courses in leadership, change, and organizational development and engages students in understanding how leaders promote continuous improvement through mentorship and professional development.

PSY 06628: Individual Psychodiagnostics II 3 s.h.
This course will focus on cognitive and educational assessment based on the Cattell-Horn-Carroll (CHC) theory of intelligence. Administration and interpretation of the Stanford-Binet: Fifth Edition and the Woodcock-Johnson Assessment Battery: Third Edition will be the course competencies. Special assessment issues covered will include nondiscriminatory assessment, preschool assessment and the assessment of academic achievement, with particular emphasis on the assessment process as a link to classroom cognitive and instructional intervention.

PSY 06632: School Psychology: Consultation And Intervention 3 s.h.
The course is designed to help students become familiar with alternative frameworks for educational delivery systems including emerging skills in instructional and collaborative consultation, teaming strategies, curriculum based assessment and measurement, and intervention strategies in the academic, behavior and social areas. Emphasis is placed in viewing the problems children experience in schools from a systems or ecological perspective as opposed to residing within the child. The role of the school psychologist will be enlarged to permit their effective participation in transdisciplinary school based terms.

SNUR 92407: School And Family Issues For Children With Ongoing Health Care Needs 3 s.h.
This course explores various health care needs of the chronically ill school age child. There is an emphasis on the importance of collaboration between home and health care providers. Family dynamics and legal issues are discussed and resources are identified. The teacher's role in meeting both the educational and health care needs of children is stressed.

SNUR 92430: Methods And Materials In Health Teaching For School Nurses 3 s.h.
This course emphasizes the school nurse's expanding role as a classroom health teacher as well as a resource person to the school staff. Discussions and experiences will center on theories of teaching and learning, planning for teaching, curriculum development, the New Jersey Core Curriculum Content Standards (NJCCCS), teaching strategies, educational resources, classroom management, assessment, and the integration of health teaching into varied school subjects. A K-12 classroom experience is included to facilitate the integration of theory into the clinical practice.

SNUR 92444: Practicum In School Nursing 3 s.h.
Prerequisites: SNUR 92466
The purpose of this field experience is to provide an opportunity for the student to engage in a mentoring relationship with an experienced, certified school nurse. The student will have the opportunity to observe and participate in the various roles, functions, and activities of the school nurse. The course requires 50 hours of clinical experience with the school nurse mentor. A University supervisor will visit the student in the field placement situation. Meetings of all students enrolled in the Practicum are held periodically at the University's Glassboro campus.

SNUR 92445: Internship In Health Teaching For School Nursing 3 s.h.
Corequisites: SNUR 92448 Prerequisites: SNUR 92430 andSNUR 92466
The purpose of this field experience is to provide an opportunity for the student to utilize the NJ Comprehensive Health Education and Physical Education Curriculum Framework and the NJ Core Curriculum Content Standards to teach health classes in a classroom setting with an experienced, New Jersey certified teacher. The course incorporates the interaction between the school nurse and the school counseling program, by utilizing school guidance counseling standards and indicators. The course requires 10 hours of teacher observation prior to teaching 40 hours of health. A University supervisor will visit the student in the employed or field placement situation. Meetings of all students enrolled in the Internship course are held periodically at the University's Glassboro Campus.

SNUR 92466: School Health Services 3 s.h.
School Health Services and functions of the school nurse within the organizing framework of the CDC's School Health Model/Whole School, Whole Community, Whole Child are discussed, as well as specific roles to include that of the school nurse within the comprehensive school counseling program. The interface between health services and nationally utilized school guidance counseling standards and indicators is discussed. Fundamentals of substance abuse are included to provide a basis of understanding with regard to the role of the school nurse including relevant information on best practices, resources, and the referral process. Particular emphasis is placed on the role of code, regulation, and SHS policy, as well as available resources relating to students, their families, and SHS personnel.

SNUR 92751: Instructional Design & Curriculum Development In Nursing Education 3 s.h.
Prerequisite: EDAM 27783
This course explores the developing role of the nurse as an educator and Instructional leader. The process from institutional design, curriculum development, methodologies, strategies and outcomes will be emphasized to facilitate the learning process.

SNUR 92752: Nursing Program Evaluation & Information Resources 3 s.h.
Prerequisites: EDAM 27783 and SNUR 92751
This course will explore how information technology and resources are transforming nursing education. The methodology of evaluating comprehensive nursing programs within the context of core competencies, technology, standards, and accreditation for quality management are reviewed.

SNUR 92753: Practicum In Nursing Education 3 s.h.
Prerequisites: EDAM 27783 and SNUR 92751and SNUR 92752
This practicum will provide the student with the opportunity to synthesize and apply acquired knowledge and skills in a planned and guided teaching-learning environment through the mentorship process.

SPSY 06627: Cognitive Assessment And Data-Based Decision Making 3 s.h.
Prerequisite(s): Matriculation in the Educational Specialist Program in School Psychology or by permission of the Program Coordinator or Course Instructor
This course will focus on an overview of theories of intelligence as well as the use, organization, and interpretation of individual standardized tests. It will cover administration, scoring, and interpretation of individual intelligence tests, with particular emphasis on assessment as a foundation for decision-making, identifying strengths and needs, and developing evidence-based learning interventions for students.

SPSY 06628: Psychoeducational Assessment And Data-Based Decision Making 3 s.h.
Prerequisite(s): SPSY 06627
This course builds upon the knowledge and competence learned in previous graduate level school psychology assessment courses. It will focus on the application of academic assessment methods, as well as interpretation and communication of assessment results to inform eligibility for educational services and intervention support in accord to professional standards and evidence-based practices. Assessment issues relevant to school psychology practice will be discussed.

SPSY 06629: Behavioral-Social Assessment And Data-Based Decision Making 3 s.h.
Prerequisites: SPSY 06628
This course will focus on an overview of norm-referenced and functional assessment of behavior using systematic and data-based activities within a problem-solving model. This will include instruments and techniques for obtaining information regarding behavior, affective, adaptive and social skills. There will be an emphasis on interpreting data from multiple sources to achieve the goal of identifying strengths and needs, understanding problems and measuring progress. Emphasis will be placed upon translating assessment results into evidence-based interventions and evaluating their outcome.

SPSY 06632: School Psychology: Consultation, Collaboration and Intervention 3 s.h.
Prerequisite: SPSY 06629
The course is designed to help students become familiar with alternative frameworks for educational delivery systems including emerging skills in instructional and collaborative consultation, teaming strategies, curriculum based assessment and measurement, and intervention strategies in the academic, behavior and social areas. Emphasis is placed in viewing the problems children experience in schools from a systems or ecological perspective as opposed to residing within the child. The role of the school psychologist will be enlarged to permit their effective participation in transdisciplinary school based terms.

SPSY 08545: Home/School/Community Collaboration 3 s.h.
This course is designed to promote students' knowledge, skills and dispositions regarding positive home-school and community collaborations. Topics include the study of families and schools as separate systems, ways in which family systems, theory, diversity, and disabilities affect both a student's learning and behavior, and the families' relationships with schools. The role of educational helping professionals and methods of collaboration between home, school, and community that will facilitate effective comprehensive services will be examined.

SPSY 08547: Professional School Psychology 3 s.h.
The purpose of this course is to introduce students to current theory, research, practices and issues in school psychology and to the code of ethics that guides the field. Particular emphases are conceptual, professional, legislative, legal and ethical issues, and emerging problems in school psychology. Students will apply these issues to their own training and professional development. The student will be introduced to the conceptualization of the school psychologist as a problem-solver who links assessment to intervention and provides both direct and indirect psychological services.

SPSY 22600: Applied Research Seminar I: School Psychology 3 s.h.
This course will concentrate on the latest developments in the field of school psychology, emphasizing evidence-based practice and research findings. Students will be expected to design an applied research project in the field of school psychology. In addition, students will participate in a school-based field experience to directly observe the role of the school psychology practitioner.

SPSY 22601: Applied Research Seminar II: School Psychology 3 s.h.
Prerequisite: SPSY 22600
This course will concentrate on the latest developments in the field of school psychology, emphasizing evidence-based practice and research findings. Students will conduct an applied research project in the field of school psychology. In addition, students will demonstrate their knowledge in school psychology through a comprehensive assessment.

SPSY 22623: Internship In School Psychology 3 s.h.
Prerequisite: SPSY 22630
The 3-credit course entitled 'Internship in School Psychology' is a 300-hour experience completed on a half-time school week basis over four consecutive semesters in a school setting. Students are placed in approved sites for their internship experience where they are supervised by an appropriately credentialed school psychologist. Interns receive at least one hour of field-based supervision per week from a practicing school psychologist, who is responsible for no more than two interns at any given time. Interns are expected to attend scheduled Internship classes on the Rowan University campus. To complete the EdS in School Psychology and to be eligible for NJ Department of Education certification as a School Psychologist, students must complete 12 credits of Internship in School Psychology totaling 1200 hours of field experience.

SPSY 22630: Practicum In School Psychology 3 s.h.
This course emphasizes psychoeducational assessment, intervention, and strategies for the student with special needs. Practical experiences in psychoeducational assessment and consultation strategies with students are provided, as well as, with staff and parents. Graduate students complete a 300-hour field experience within a public school setting during which they provide assessment, consultation and counseling services to P-12 children. Instruction as well as supervision is provided as part of this practicum experience.

SPSY 22634: Internship In School Psychology 6 s.h.
This is a full school year internship in School Psychology with placement in a public school. Monthly meetings will focus on discussion of psychological diagnosis, educational remediations and research based upon consideration of case materials related to externship experiences; review of current theoretical and experimental developments in school psychology.

SPSY 25516: Applied Tests and Measurements 3 s.h.
Emphasis is placed upon data-gathering, the evaluation of data and the use of data in educational measurement. Standardized tests, both group and individual, will be studied.

ECE 09504: Special Topics in Electrical and Computer Engineering 1 to 3 s.h.
This course covers timely topics in electrical and computer engineering related to engineering practice and/or research. It is in fact a series of courses that constitute the emerging topics in electrical and computer engineering sequence. These classes can be taken multiple times when approved by the advisor. Multiple sections of this course are offered during each semester with different contents on emerging topics. The following courses have recently been taught in this class: Power System Engineering; Computer Networks; Electronic Packaging; Nanotechnology; DSP Architectures; RF Design; Deep Learning; Microwave systems; Smart Satellites and Internet of Things.

ECE 09509: Virtual Reality Systems 3 s.h.
Virtual Reality (VR) Systems covers the architecture a;nd design of current generation systems for creating 3D VR environments. Topics included are application/hardware architecture, pipeline development, geometric transformations in a 3D coordinate system, geometry and pixel shading, lighting systems, texturing and VR development. Students will be exposed to current VR technologies and next generation algorithms. As a graduate level course, students are expected to gain a solid foundation in SLSL shader theory, advanced object oriented design techniques, pathfinding algorithms, and apply these techniques to independent research experience to a problem of their choosing.

ECE 09510: Advanced Alternate Energy Systems 3 s.h.
This course will introduce the basics and current trends of the electric power system and electric power industry. Students will learn methods to mathematically analyze different renewable electric energy systems and evaluate their performance, economics, and sustainability. Specifically, key basics of wind and solar energy technologies, and their power grid integration issues will be extensively discussed. Opensource software will also be introduced to the class to assist their study, such as PVWatt from NREL. Other alternate energy sources, such as CHP, Microturbine, biomass, PHEV, Microgrid, etc. will also be introduced. After finishing this course, students are expected to be able to conduct a critical analysis of national and global energy systems. The advanced graduate level version of this course features a research project and presentation component for graduate students to identify, research and present renewable energy integration technologies into modern power systems that are relevant to this course.

ECE 09515: Emerging Electricity Market 3 s.h.
This course will provide ECE graduate students with a basic understanding of the power system restructuring, market design, and pricing mechanisms in different physical and financial electricity markets. Rigorous mathematical formulation and MATLAB based simulation will provide students with an in-depth understanding on the major differences between the conventional regulated and the emerging restructured power system operation paradigms, and adequate training to solve the different system operation problems. This course will feature a research project and presentation component for graduate students in exploring current industry practices and challenges in electricity market operations.

ECE 09517: Technologies Towards Green Energy Future 3 s.h.
There is a transformational change in the electric power systems and electric power industry fueled by renewable "green" energy sources. This introductory course will provide an overview of the fundamental technologies that enable this transformation, starting with a review of the current energy sources for electricity generation, including natural gas, nuclear, hydro, wind, solar, coal, and others. Continuously changing positions of these sources in the electric energy portfolios will be discussed to illustrate the increased importance of renewable sources. There are, of course, significant challenges that renewable energy faces, such as low efficiency/high-cost harvesting, uncertainty/intermittency of power output, as well as system integration issues and their impacts. These challenges will be addressed via solutions using advanced controllers, smart inverters, and energy storage technologies. Along the way, several key and fundamental concepts will be introduced, such as power and energy calculation, instantaneous/average/active/reactive power, three-phase systems, power factor, phasors, network equations, power quality, induction and synchronous machines, which will prepare students to subsequent courses in this sequence. This course will also include hands-on design projects for harvesting renewable energy. The Graduate level course will specifically emphasize an independent course project.

ECE 09518: Wind Energy System Planning and Operation 3 s.h.
Prerequisite(s): ECE 09517
Wind energy is one of the most critical green renewable energy sources in the U.S., with significant – and still yet unrealized – potential for wind power capacity and generation across the nation. Realizing that potential requires financially viable and physically feasible long-term planning, short-term operation, and real-time control of land-based and offshore wind farms, which constitute the primary focus of this course. Specifically, this course will introduce HVAC (High Voltage Alternating Current) and HVDC (High Voltage Direct Current) transmission technologies and compare them to integrating wind energy projects into the power grid. Specific topics discussed in detail include generation system reliability and cost analysis, coordinated generation system and transmission system planning, planning under changing market environments, economic dispatch of wind energy systems, and optimal power flow with wind energy integration. Industrial power system planning and operation tools aided by a set of hands-on labs that use industry-standard simulation systems such as MATLAB/Simulink and Opal-RT will also be introduced. This Graduate level course will specifically emphasize an independent course project.

ECE 09521: Fundamentals of Systems Engineering 3 s.h.
Systems Engineering is the interdisciplinary approach and means to enable the realization of today's complex, dynamic products and systems. Individual products such as Cell phones, aircraft, automobiles, computers and even household appliances are made up of parts developed by many people with varied skill sets, often working for different companies and from remote locations. Other systems such as transportation, energy generation and distribution, medical, communications, emergency response and similar are very complex as they are composed of many varieties of products and systems. Systems Engineering is an integrating function that addresses all the disciplines and specialty groups resutling in a structured development process that proceeds from concept to production to operation including maintenance & support, and eventual disposal. Systems Engineering considers both the business and the technical needs, including environmental and safety, of all customers with the goal of providing a quality product that meets the user needs. It focuses on defining customer needs and required functionality early in the development cycle, documenting requirements, proceeding with design synthesis and system validation while considering the complete problem that includes - operations, cost & schedule, performance, training & support, sustainment, test, disposal, and manufacturing. The course is designed to expose the student to the system engineering process to complement their technical skill set and to cover topics that are often not covered in other classes. The course will include frequent guest lecturers who are practicing experts in the systems engineering domain. The course will utilize the latest in processes and software tools from industry such as SysML modeling and architectural documentation tools. Students will participate in a semester long project to gain hands-on experience with the course concepts. This graduate level course will also provide opportunities for team management and cultivation of leadership and communication skills.

ECE 09523: Advanced Radar Systems 3 s.h.
This course will provide an introduction to radar systems, range equation and radar signal processing techniques as well as the nature of physical observables and propagators, the effects of the propagation medium on sensor performance, the relationship between signals and noise, and the characteristics of critical sensor functions (including detection and tracking). Radar subsystems will be studied, including antennas, transmitters, receivers, and signal processors. This will also feature a project component for students to identify, research and present open problems that are relevant to radar systems.

ECE 09524: Advanced War Gaming and C4ISR 3 s.h.
This course will expose students to a comprehensive range of technologies that govern the effectiveness of our nation's ability to effectively conduct military operations. It focuses on material drawn from a working group of distinguished thought leaders in critical technology and operations areas, thereby exposing students to the state-of-the-art thinking and philosophies. The class material will be enhanced by the study of patents that relate to the subject which were issued to the course instructor. This course will also include advanced topics such as C4ISR algorithms, and graduate students taking this class will be expected to work on a course project involving implementation of important C4ISR algorithms.

ECE 09525: Advanced Command and Control 3 s.h.
Command and Control (C2) is defined as the exercise of authority and direction over assigned forces in order to accomplish a mission. This course will embark on a study of C2 information processing and decision making in the context of adaptive combat systems, as well as civilian and business examples. The course topics include the following: the history of military C2, C2 decision processes (Observe-Orient-Decide-Act loops), problem sense making (Identification) and solution finding and implementation processes, operational architectures, information fusion, control theory, mission success and organizational fitness. The course will also feature a project component for which the students will identify research, execute and present a solution to a problem that is relevant to course content.

ECE 09526: Advanced Weapon Systems 3 s.h.
This course will study system engineering principles in the weapon system components and will relate the principles used in components such as prelaunch decision processing and missile in-flight control functionality to the robustness of the overall combat system. Missile systems will be studies, including basic aerodynamics and propulsion. The engineering principles discussed will be used to develop missile guidance laws and track filters to support a robust combat system design. In addition to these, advanced topics such as track fusion and advanced guidance laws will be discussed, and graduate students taking this class will be expected to complete a project which shows competence and understanding of these advanced topics in addition to course requirements of the undergraduate version of this class.

ECE 09527: Advanced Model Based Systems Engineering 3 s.h.
This course is an extension of systems engineering by addressing the needs to better train and prepare students to use model-based techniques to solve complex design problems. This multi-disciplinary class is designed to use a model-based systems engineering approach to transform a set of customer needs, expectations, and constraints into a solution and to support that solution throughout its lifecycle. Students will utilize SySML, a general-purpose modeling language, for developing complex systems composed of hardware, software, information, personnel, procedures, and/or facilities. Through the use of SySML students will gain an understanding of structural, behavioral, parametric, and requirements models and their application. Students will also learn how these models can be used to inform other domain specific activities or subordinate models.

ECE 09531: Advanced Optical Fiber Communications 3 s.h.
Prerequisite: Graduate Standing
This course provides a working knowledge of the components comprising fiber-optic networks and system design and analysis of fiber-optic networks. The fiber-optic networks form the backbone of today's communication networks, including the global internet, 4G wireless, home access (e.g., FiOS), and data center networks. The operation of lasers, optical fiber, optical modulator/demodulator, receivers, and optical routers will be discussed. The applications of fiber-optics techniques, such as fiber to the home, the broadband wireless-optical interface, all-optical switching, broadband analog signal processing and computing, and security in fibers, will be discussed. The graduate version of this course will focus more on applications and experimental skills of optical fiber technologies. Students will have opportunities to access and operate high-speed optical communication system from the research lab.

ECE 09536: Systems On Chips: Design & Analysis 3 s.h.
This course is intended for a cross-cutting exposition to the design principles involved in development of Systems on Chips (SoC). The content taught in this course will enable graduate students to develop deployable hardware systems by discussing the SoC components and prevalent ideas in superscalar computing. The graduate version of this course requires more advanced project work in order to be approved by the course instructor and subsequently completed by the student.

ECE 09551: Advanced Digital Signal Processing 3 s.h.
Prerequisites: ECE 09351
This is a graduate level course in digital signal processing (DSP), whose applications include analysis, compression, recognition and processing of all telecommunications, audio – visual, biomedical, financial, energy demand and consumption, seismic/tectonic/oceanographic data, among many other countless systems possible. The primary goal of this class is to introduce advanced topics in signal processing and filter design approaches that allow analysis of real-world signals that cannot be easily analyzed by the basic approaches discussed in the undergraduate level DSP course. Such signals include non-stationary signals with time-varying spectra as well as those scenarios where signal and noise spectra overlap. The specific topics that will be discussed in this class include advanced filter design and implementation approaches, filter banks, analysis of random signals and spectral estimation, analysis of non-stationary signals using short-time Fourier transforms and wavelet transforms, optimal and adaptive filters, and signal separation techniques such as independent components analysis. This is an applied class and will feature several real-world projects.

ECE 09552: Digital Image Processing 3 s.h.
Digital image processing covers the analysis and contemporaneous applications of the enhancement, restoration, compression and recognition of monochromatic images. Both classical and state-of-the-art algorithms will be employed in conjunction with appropriate software for analyzing real-world images.

ECE 09553: Digital Speech Processing 3 s.h.
This course covers the fundamentals of digital speech signals and processing and simultaneously stresses real-life engineering aspects from a systems perspective. An overview of the different branches of speech processing are covered, namely, speech production, vocal tract modeling, speech coding, speech recognition, speaker recognition and speech synthesis. The building blocks of such applications, namely, linear predictive analysis and quantization (scalar and vector) are taught.

ECE 09554: Theory and Engineering Applications of Wavelets 3 s.h.
The theory of wavelets gave rise to a substantial number of applications in many areas including various fields of engineering, making it one of the most popular research areas of all times. In this class, the theory of wavelets will be carefully developed from the ground up, with an emphasis on engineering applications. Starting with a review of Fourier based signal analysis methods, short time Fourier transform, continuous wavelet transform, discrete wavelet transform, fast wavelet algorithms, wavelet packets, wavelet networks will be discussed. Applications of wavelets such as image and audio compression, biological signal analysis, feature detection, signal denoising will also be explored.

ECE 09555: Advanced Topics in Pattern Recognition 3 s.h.
This class will introduce a broad spectrum of pattern recognition algorithms along with various statistical data analysis and optimization procedures that are commonly used in such algorithms. Although mathematically intensive, pattern recognition is nevertheless a very application driven field. This class will therefore cover both theoretical and practical aspects of pattern recognition. The topics discussed will include Bayes decision theory for optimum classifiers, parametric and nonparametric densityestimation techniques, discriminant analysis, basic optimization techniques, introduction to basic neural network structures, and unsupervised clustering techniques. As a graduate level course, several advanced and contemporary topics will also be covered, including fuzzy inference systems, support vector machines, adaptive resonance theory, incremental learning and online learning and particle swarm optimization. Students will be expected to conduct independent research for possible publications, as part of the class project.

ECE 09556: Advanced Embedded Software Design 3 s.h.
Prerequisites: ECE 09342
Embedded systems dramatically enhance our lives and are prolific in our everyday life. It is not uncommon for Americans to come in contact with over one hundred embedded systems each day. With billions of embedded systems, being produced each year there is a huge need for engineers who can create good embedded software. This course focuses on embedded software for applications running directly on an embedded processor without an operating system. A brief survey of microcontroller technologies will be covered but the class will focus on ARM microcontrollers and the embedded peripherals available on such devices. Advanced embedded communications technologies (CAN, WiFi, Bluetooth, ZigBee, etc.) will be surveyed and at least one implemented during the course. A great emphasis will be put on good programming practices and design patterns which support working in larger groups. Additionally, students will learn project management skills and will be required to manage a team of undergraduate engineers to accomplish a real world embedded system project.

ECE 09557: Advanced Biometric Systems 3 s.h.
Biometrics is the science of recognizing and authenticating people using their physiological and/or behavioral characteristics. By using biometrics, it is possible to establish an identity based on "who you are", rather than by "what you possess" (e.g., an ID card) or "what you remember" (e.g., a password). Interest in biometrics has increased significantly with a global market that is experiencing very rapid growth. Border and immigration control, restricted access to facilities and information systems, cybersecurity, crime investigations and forensic analysis are just a few of the primary application areas of biometrics used by commercial, government and law enforcement agencies. There is much research interest in different biometric systems with the main issues being high performance, ease of use and implementation, low cost and high user acceptance. This course involves the study and design of various biometric systems (fingerprints, voice, face, iris and other modalities). Multibiometric systems are also covered. This includes feature fusion, classifier fusion and systems that use two or more biometric modalities. Biometric system performance and issues related to the security, ethics and privacy aspects of these systems will also be addressed. Course principles are reinforced by a significant project or research experience.

ECE 09558: Reinforcement Learning 3 s.h.
Reinforcement Learning course will provide solid foundations for tackling advanced reinforcement learning problems. Students will learn about the core challenges and approaches in RL. Through a combination of lectures, projects, and written and coding assignments, students will become well versed in key ideas and techniques for RL. The course will introduce fundamental concepts of RL, including Markov Decision and Reward Processes, Dynamic Programming, Model-Free Learning, Temporal Difference, Monte Carlo search, on-policy control, off-policy methods, and policy gradient methods. Class assignments will include implementation of basic as well as advanced RL algorithms using TensorFlow topics. Besides, students will advance their understanding and the field of RL through a final project again using TensorFlow libraries. An essential component of the project will be a written report on the lines of a research paper (preferably IEEE Conference style).

ECE 09560: Artificial Neural Networks 3 s.h.
Artificial Neural Networks covers the design of a variety of popular neural network architectures and their contemporary engineering applications. Neural network architectures that will be studied in detail include the multilayer perceptron, radial basis function, and the Hopfield networks. State-of-the-art software will be used for network design. VLSI implementations of neural networks will be discussed.

ECE 09566: Advanced Topics in Systems, Devices, and Algorithms in Bioinformatics 3 s.h.
Prerequisites:
Bioinformatics is the field of applying computational techniques, from mathematics, statistics, and machine learning to the vast amounts of biological - but most specifically genomic - data. While some refer to bioinformatics only in the context of collection, storage, organization and access of such biological data within large databases, this course's view of bioinformatics will include - in fact focus on - systems and devices that generate such data, and development of methodologies and models to analyze the vast quantities of data generated by such systems and devices. The course will provide basic biological background of genomics, will introduce the students to commonly used bioinformatics databases and computational tools (such as search, alignment, and protein visualization tools) used to analyze genomic data from such databases. The focus of the course will be on basic bioinformatics systems and devices, such as high throughput next generation sequencers and gene chips, followed by an in-depth discussion on the theory of basic genomic signal processing and computational intelligence techniques used in bioinformatics, including hidden Markov models and optimization algorithms for sequence alignment and gene prediction, clustering and classification algorithms. This course will also provide students with a mechanism to conduct independent research to advance the field through development of novel algorithms and approaches.

ECE 09568: Discrete Event Systems 3 s.h.
Prerequisites: ECE Majors: ECE 09243 Non ECE Majors: Permission of Instructor
This course introduces fundamentals of discrete event system models and their applications in modeling, control, analysis, validation, simulation, and performance evaluation of computer systems, hardware/software co-design, manufacturing/de-manufacturing processes, communication networks, and transportation, etc. The mathematical and graphical models include graphs, finite state machine, Petri Nets, timed models, stochastic timed models, and Markov chains, etc. As a graduate level course, it also provides students with a mechanism (a) to conduct independent research on advanced and contemporary DES topics, including higher-level Petri Nets, finite automata based supervisory control, and Petri Nets in job shop scheduling, etc.; and (b) to develop novel models and algorithms for DES.

ECE 09569: System-On-Chip Verification 3 s.h.
Prerequisite: ECE Majors: ECE 09243 Non ECE majors: Permission of Instructor
This course introduces students to a variety of state-of-the-art hardware design verification methods, including traditional functional simulation, assertion-based verification and a subset of formal verification techniques. Topics covered include functional simulation, coverage metrics, testbench design and automation, assertion-based verification, and property specification language (PSL). As a graduate level course, students are expected to gain a solid foundation in current, practical chip verification techniques, underlying theory, and significant independent research experience applying the techniques, particularly formal verification methods, to a real problem of their own choice.

ECE 09571: Instrumentation 3 s.h.
Elements of instrumentation systems are treated including transducers, signal conditioning, and signal processing. Elements of modern instrumentation systems including standards (IEEE-488, SCPI) and smart sensors are considered.

ECE 09572: Advanced Smart Grid 3 s.h.
Prerequisites: ECE 09342 and ECE 09321
The ways in which electricity is generated, transmitted, distributed, stored, and used, are the subject of revolutionary and evolutionary changes compared to the electricity grid we have today. Smart Grid goals include the improvement of grid reliability, reduction in outages, faster return on service, ability to integrate a broad range of renewable energy sources, and to include customers in the ability to effect load decisions based on grid demand and energy pricing. This course will address grid fundamentals, tools and technologies, and then address major Smart Grid subsystems including conventional and alternative generation, storage technologies, transmission and distribution systems, standards, demand management, real-time pricing, grid stability, control technologies, measurement including Smart Sensors and Advanced Metering Infrastructure (AMI). Physical and cyber vulnerabilities will also be addressed. The course will include a project to reinforce Smart Grid elements.

ECE 09573: Advanced Smart Sensors 3 s.h.
Prerequisites: ECE 09342 AND ECE 09311 AND ECE 09321
Elements of Smart Sensors and Smart Sensor systems are treated. Instrumentation fundamentals covered include transducers, signal conditioning, and data acquisition, communication, along with important considerations and associated standards. Relationship of smart sensors to integrated system health monitoring (ISHM) and similar Intelligent Sensor applications are addressed. The course will include a project to reinforce Smart Sensor elements and provide opportunities for research in the field.

ECE 09582: Advanced Memristors and Nanoelectronic VLSI 3 s.h.

This course is an advanced course in the extension of analog/digital electronic systems, dealing with CMOS devices and emerging nanoelectronic devices and technologies. Since the importance of emerging nano systems goes beyond traditional circuit theory and EE in general, this course aims to provide students with an opportunity of understanding the fundamental concepts of a set of emerging nanodevices, with particular emphases on memristors and memristive systems, and their potential applications and impacts on the next generation VLSI systems. The course will also emphasize hands-on programming and application to examples as an important means to understand and benefit from the material. Software tools such as Matlab/SPICE/Cadence will be extensively used throughout the learning and design experiments.

ECE 09585: Advanced Engineering Cyber Security 3 s.h.

Prerequisite(s): Graduate standing

This course addresses the need to better prepare students for the expansion in the Internet of Things (IoT) by imparting fundamental concepts and capabilities in the management of cyber security. Cyber security is key to developing large-scale, wide-area systems, which can provide the degree of security required to further implementation of highly-vulnerable, highly-visible systems such as the Smart Grid. To gain this understanding, the course addresses a number of key components: standards including network and encryption techniques (RSA, etc.) and security processes, methods of cyber attach, and some methods of software and hardware security enhancement. COurse principles are reinforced by a significant project or research expereince.

ECE 09586: Advanced Portable Platform Development 3 s.h.

Prerequisite: ECE 09243

The total number of Android and iOS devices is estimated to be over 1.6 billion devices (2013) and continues to grow. The ubiquitous nature of these devices means they are now the default choice of platforms for hardware and software developers. This course details the ARM core architectures, which underpin the majority of mobile devices, along with the basic operating system and application software environments. Principles of effective app development using available SDK tools and project management techniques are presented. Methodologies for performance analysis are treated. The hardware vs. software trade space will also be considered. The course content is reinforced with a significant development project.

ECE 09590: Advanced Emerging Topics in Computer Engineering 1 to 3 s.h.

Prerequisite(s): Specific prerequisites are determined by the nature of the course content when it is announced.

This course covers special topics in emerging areas of Computer Engineering such as Computer Networks, Mobile Robotics, and Embedded Systems.

ECE 09595: Advanced Emerging Topics in Computational Intelligence, Machine Learning and Data Mining 1 to 3 s.h.

Prerequisite(s): Specific prerequisites are determined by the nature of the course content when it is announced.

As the amount of data we generate grow astronomically, so does the need for approaches, algorithms, techniques and the hardware that can be used for effective processing, storing, and analysis of such massive volumes of data. Computational intelligence, machine learning and data mining all deal with automated analysis of large volumes of data in search of known or hidden structures, patterns and information. While well-established approaches that now form the foundations of these topics are discussed in other specifically named courses, this graduate level course will provide an advanced treatment of emerging topics - fueled by rapid growth of research and development in these areas - but that have not yet reached the mainstream textbooks. Hence, due to its very nature, the specific content of this class will be diffrent every time it is offered, focusing on the most recent developments in these areas. Graduate students taking this class will be expected to complete a project on a class related emerging topic of their interest.

ECE 09651: Estimation and Detection Theory 3 s.h.

Prerequisite(s): ECE 09430

Modern estimation and detection theories can be found at the heart of many engineering systems including radar, sonar, speech, image analysis, biomedicine, communications, control and seismology. All these systems share the common problem of needing to estimate the values of a group of parameters or being able to decide when an event of interest occurs and then to determine more information about that event. In radar, we are interested in determining the position of an aircraft, as for example, in airport surveillance radar. The task of information extraction is the subject of estimation theory; and the task of decision making is the subject of detection theory. The course will showcase numerous examples that illustrate and apply the theory to current problems of interest in engineering.

ECE 09655: Advanced Computational Intelligence and Machine Learning 3 s.h.

Prerequisites: ECE 09.455 or ECE 09.555 or ECE 09454 orECE 09.560 or CS 07.556

Computational Intelligence and Machine Learning deal with automated classification, identification, and/ or characterizations of unknown systems based on data, typically – and increasingly – large volumes of data. This course is an advanced research-intensive graduate level course that explores the more advanced and emerging topics of computational intelligence, such as – but not limited to – graphical models, Monte Carlo approaches, incremental and online learning, learning in nonstationary environments, deep belief networks, and other topics that are emerging at the time of offering. In fact, the exact content of the course is likely to evolve over the years due to the rapid development of the field. As an

advanced research intensive course, this class will involve a thorough literature search and review, followed by proposing, executing and presenting results on a novel real-world computational intelligence problem that is of research interest to the student. Students will be encouraged to publish the outcomes of their research project.

ECE 09702: Strategic Technical Writing and Winning Grant Proposals 3 s.h.
Prerequisite: Successful completion of the Ph.D. Qualifier Examination
Effective technical writing is perhaps one of the most critical skills a Ph.D. engineering graduate needs to have regardless of the career path chosen upon graduation. Whether writing research papers, technical reports, or grant proposals, the ability to convey technical engineering knowledge in an effective, understandable, elegant and concise manner is an important skill. This class will provide the general guidelines, best practices, and most importantly specific strategies for technical writing for some of the most common venues and audiences, namely writing technical papers for engineering conferences and journals - including writing rebuttals to reviewers - technical reports and grant proposals. The latter includes specific strategies for a variety of different sponsors that fund engineering related research, including industrial sponsors, government and military agencies, foundations as well as intra-company funding sources. The deliverables of this class includes an actual conference or journal paper and a small scale grant proposal-ready to be submitted - based on student's area of research.

ECE 09704: Special Topics for Doctoral Students in Electrical Engineering 1 to 6 s.h.
This class provides timely coverage of specific advanced and emerging topics in Electrical and Computer Engineering, and it is intended for doctoral students. Special topics courses may be traditional classroom-based courses as well as research-related courses supervised by specific advisers. This class may be taken multiple times when offered with a different special topics content.

CM 01301: Fundamentals of the Construction Industry I 3 s.h.
Corequisite: CM 01302
This course provides a general overview of the planning, administration, management, and cost of construction projects and an introduction to the methodology used in executing specific designs. Emphasis is placed on the organization of construction firms, use and types of primary construction equipment, estimating and quantity take-offs, contractual and management systems, scheduling, project administration, and inspection of construction operations.

CM 01302: Fundamentals of the Construction Industry II 3 s.h.
Prerequisite/Corequisite: CM 01301 (may be taken concurrently)
This course introduces the design process and development of construction documents. It covers the standard design phases: programming, conceptual design, schematic design, design development, construction documents and construction administration, and the format and utilization of project manuals including contract specifications, the interpretation and analysis of engineering plans and specifications, and the new technologies being used in the design including Building Informational Modeling (BIM) and sustainable (green) practices. The course also explores the various common project delivery methods.

CM 01303: Project Building Systems 3 s.h.
Prerequisites: CM 01301, CM 01302
Students will learn the description and identification of the equipment and materials used in mechanical systems for heating, ventilating and air conditioning, electrical, plumbing, fire protection, piping, gas, lighting, water and waste water, conveyance, life safety systems, environmental, security, audio/visual, and building system controls. The course also provides and introduction to building structural and envelopes systems.

CM 01304: Project Administration 3 s.h.
Prerequisite: CM 01304 (Fundamentals of the Construction Industry II).
This course provides exposure to and use of various types of projects control systems for project efficiency and documentation. Students will learn how the submittal process operates and is monitored. They will also be shown a variety of tools used in tracking project documentation, and essential elements related to contract law and administration.

CM 01305: CONSTRUCTION COST ESTIMATING 3 s.h.
Prerequisite: CM 01302 (Fundamentals of the Construction Industry II)
Introduction to various costs of construction including direct and indirect project costs, comparison of hard and soft costs, job cost analysis and forecasting of cost to completion, labor, material and equipment expenses, cash flow, overhead, profitability, and general conditions costs. Students will learn research techniques used to create accurate estimating and bidding procedures.

CM 01306: Construction Project Planning and Scheduling 3 s.h.
Prerequisites: CM 01301, CM 01302
Students will learn procedures used in project planning and scheduling that employ float methods of scheduling logic. They will examine the critical path series of activities of project completion, including the use of computer software applications for problem solving, and related tools, spreadsheets, and information management. Also covered are work breakdown structures, activity durations, status reports, resource allocation, re-planning, monitoring, and updating of projects. Students will develop projects site logistics plans.

CM 01407: Advanced Leadership and Communication 3 s.h.
Prerequisite: CM 01302 (Fundamentals of the Construction Industry II)
The course is designed to teach students to become more effective leaders and communicators in the construction industry. Drawing on various case studies, students will examine ethical practices in the industry. They will define and role-play effective communications strategies that simulate situations they may encounter within the industry such as general-to-subcontractor, corporate, and labor relations. Students in this course will also examine principles of negotiation and dispute resolution in the construction industry.

CM 01408: Industrial Relations in the Construction Industry 3 s.h.
Prerequisite: CM 01302 (Fundamentals of the Construction Industry II).
This course examines various perspectives (union, management, government) on the collective bargaining system in place in the construction industry. Topics include the legal and regulatory environment, problem solving, and the roles of labor and corporations.

CM 01409: Building Energy Systems for Construction Managers 3 s.h.
Prerequisite: CM 01302
The Building Energy Systems for Construction Managers course provides a conceptual understanding of functions and performances of energy systems including mechanic al, electrical, electronic, and plumbing and transport systems in residential and commercial buildings. The course also provides information on integration between energy systems and other building components. While introducing the concepts of alternative energy sources, energy efficiency, structural implications of mechanical systems, indoor air quality, and environmental control strategies, the course familiarizes students with more recent and current efforts in sustainability and green building ideas. The course also introduces codes and standards relevant to energy devices used in building construction, such as National Fire Protection Association (NFPA), American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), and National Electrical Code (NEC).

CM 01410: BUILD CONSTRUCTION SYS & CODES 3 s.h.
Prerequisite: CM 01302 (Fundamentals of the Construction Industry II).
This course provides a conceptual understanding of functions and performance of structural building systems. The primary purpose of this course is to provide familiarity with use of construction code with reference to International Building Codes (IBC) 2012. For anyone in the field of construction or construction management it is necessary to know about the concepts and fundamental aspects of the code. As a result, the course is intended to provide an understanding of how the code was developed, how it is to be interpreted, and how it is applied to design and construction of buildings, the goal of the course is to make implementation of the code easier, and clearer to understand. Other than discussions on structural elements and their construction methods, the course covers issues such as use and occupancy, types of construction, fire-resistive constructions, interior finishes, building material, inspections, and tests.

CM 01411: Construction Safety and Loss Prevention 3 s.h.
Prerequisite: CM 01302 (Fundamentals of the Construction Industry II).
This course offers a practical guide for eliminating safety and health hazards from construction worksites. The Handbook of OSHA Construction Safety and Health addressed the occupational safety and health issues faced by those working in the construction industry. The course covers a vast range of issues including program development, safety and health program implementation, intervention, and prevention of construction incidents, regulatory hazards faced by those working in the construction industry and sources of information. The course also features updates for construction regulations, construction job audit, training requirements, and OSHA regulations. It includes new record keeping guidelines and forms with additional material on focused inspections. Containing updated contact information for the newest agencies, the course also presents a model safety and health program, examples of accident analysis and prevention approaches.

CM 01412: Capstone Project - WI 3 s.h.
Prerequisite(s): CM 01303 and CM 01304 and CM 01305 and CM 01306 and CM 01408 and CM 01409 and CM 01410 and CM 01411;
Corequisite: CM 01407 (may be taken concurrently)
In the course, students will build on what they have learned in the major, integrating the theory and knowledge that they gained in class with practical experience in the construction industry. Capstone projects are developed through a series of project meetings between the student and program faculty, with significant written deliverables.

EM 01501: Engineering Economics 3 s.h.
This course covers a variety of topics in engineering economics including the following: making economics decisions, equivalence and the time value of money, spreadsheets and economic analysis, present worth and equivalent annual worth, internal rate of return, benefit?cost ratios and breakeven analysis, replacement analysis, depreciation and income taxes, inflation, value engineering, and decision-making tools.

EM 01511: Strategic Risk Management 3 s.h.
This course deals with a range of topics related to risk management including the following: risk terminology, tools for quantitative analysis of environmental and technological risks, social risk issues, risk in modern life, statistical analysis, data presentation, dose-response models for carcinogens, model limitations, models of risk aversion, psychological and community perceptions of risk, risk communication, environmental and health risk issues in the media, and case studies of accidents and incidents.

EM 01512: Quality In Engineering Management 3 s.h.
This course covers a range of topics related to quality in engineering management including the following: concepts and philosophy of engineering quality management, leading engineers, data analysis, engineering quality assurance and results, engineering quality methods and tools, continuous process improvement, total quality management within engineering, six-sigma, quality costs, customer satisfaction in relation to engineering design and quality, vendor relationships and quality, benchmarking engineering practices and products, statistical process control, quality function development, and case studies of quality in engineering management.

EM 01513: Engineering Decision Making 3 s.h.
This course covers the following topics related to engineering decision making: mathematical decision tree equations, mathematical programming for optimization of engineering problems, the theory behind methods and models, advanced statistical models for engineering analysis, advanced linear and non-linear models for engineering analysis, practical applications of decision methods and models to engineering problems, and identifying and balancing risk associated with technology development. Case studies dealing with real engineering projects and problems are included.

EM 01521: Construction Management 3 s.h.
This course covers the following topics related to construction management: project managers, developers, designers, contractors, and subcontractors; project startup, construction, and closeout; project financing; control of costs and schedule; construction contract types, bidding, delivery methods, and changes; bonds and insurance; inspection of work; claims, disputes, and arbitration; and case studies in construction management.

EM 01522: Construction Scheduling 3 s.h.
This course deals with the following topics in construction scheduling: scheduling terminology and history; time and duration of activities; relationships between project activities; critical path method (CPM); program evaluation and review technique (PERT); delays and other constraints; schedule development, analysis, and updating; and case studies of project construction schedules.

EM 01523: Cost Engineering 3 s.h.
This course covers a wide variety of topics related to cost engineering including the following: measuring work progress using costs, manhours, and schedule; earned value; cost and schedule performance; productivity; quantity adjusted budgets; budget and schedule baselines; control account baselines; cost control versus financial control; analysis, trending, and forecasting; cost and schedule performance curves; index and other tracking; elements of complete cost; and case studies in cost engineering.

EM 01541: Engineering Law And Ethics 3 s.h.
This course introduces students to law and ethics as it applies to engineering and engineering management. Topics covered in the area of law include the following: legal responsibilities of owners, designers, and contractors: risk management via insurance, surety bonds, and contracts; legal implications of the common activities of design professionals; liens; expert testimony; and patent law. Topics covered in the area of ethics include the following: ethical codes of professionals; derivation of ethical structures; and the role of the engineer in assuring public safety, health, and welfare. Case studies dealing with law and ethics are included.

EM 01542: Facilities Management 3 s.h.
Prerequisite: Enrollment in Master of Engineering Management Program or Master of Science in Engineering Management Program
The topics covered in this course include the general characteristics and types of facilities: management functions within a facility and their differences compared with general management; inventory, procurement, operations, and real estate management; maintenance management and planning, preventive and schedule maintenance, and contract management; energy management and energy devices, electricity, lighting, water, heating, HVAC, and efficient and intelligent buildings; safety and environmental management, OSHA, RCRA, air quality, clean air act, and other EPA requirements; emission control and fleet management; and transport equipment, elevators, escalators, moving walkways, and device operation and maintenance. In this course, all aspects of managerial and planning concepts are covered, as well as maintenance and

engineering knowhow that are relevant to and needed for the study of facilites managment.

EM 01543: Systems for Engineering Management 3 s.h.
Prerequisite: Enrollment in Master of Engineering Management Program or Master of Science in Engineering Management Program
This course teaches engineering management students the art of systems engineering. Engineering management students will learn systems engineering processes and skills to integrate user needs, manage requirements, conduct technological evaluation, and build elaborate system architectures. Engineering management students will also learn to assess risk and establish financial and schedule constraints. The course devotes particular attention to knowledge, skills, mindset, and leadership qulaities needed for an engineering manager to operate effectively in the area of systems engineering.

ENGR 01501: Special Topics In Engineering 1 to 3 s.h.
This course is designed to introduce students to emerging topics in the engineering field. Consent of the instructor is necessary, and prerequisites are determined by the nature of the topic.

ENGR 01510: Finite Element Analysis 3 s.h.
Fundamental concepts for the development of finite element analysis are introduced. The element stiffness matrices are developed using shape functions defined on the elements. Aspects of global stiffness formation, consideration of boundary conditions, and nodal load calculations are presented. Mesh division and problem modeling considerations are discussed in detail. Topics of scalar field problems and natural frequency analysis are covered. Computer applications are included.

ENGR 01511: Engineering Optimization 3 s.h.
The formulation and modeling aspects of engineering optimization problems are presented. These steps involve setting up of the objective function to be minimized and the resource and system constraints to be satisfied. Solution techniques using gradient based methods, zero order methods, and penalty techniques are discussed.

ENGR 01597: Engineering Graduate Research 1 to 3 s.h.
The objective of this course is for students to define and conduct graduate-level research with the supervision of their graduate advisor.

ENGR 01598: Master's Thesis Continuation 9 s.h.
Prerequisite(s): 6-9 Credits of "Master's Research and Thesis" (ENGR 01599) and Department Approval
Continuation of supervised research leading to a master's thesis.

ENGR 01599: Master's Research and Thesis 1 to 9 s.h.
This course will provide a meaningful one-on-one research experience under the direction of an engineering faculty advisor. The research topic will be chosen by mutual agreement of the student and his or her adviser. The course will include a thorough literature search and review, the development of a clear and concise problem statement, consultations with other faculty and professional experts, and the derivation of publishable results.

ENGR 01700: Graduate Seminar: What is Next in Engineering? 0 s.h.
Prerequisites: Graduate or Ph.D. standing
One of the primary goals of the Ph.D. in Engineering program is to teach the candidate how to identify unsolved problems in engineering, formulate a hypothesis for a feasible solution, design experiments or analysis methodologies to implement the proposed solution, analyze results and draw conclusions, all of which require critical and analytical thinking and problem solving skills, command of the general body of knowledge as well as state-of-the-art in the area of interest. This is seminar course where every week on graduate student or guest speaker will present the state-of-the-art in his/her area of research interest.
This course will allow the presenter to describe an unsolved problem of interest, complete a thorough literature review about related work, and/or present his/her work in that area, and receive comments, suggestions and critical feedback from the audience. The course will also allow audience members to learn a new topic, provide feedback to their peers, and be familiar with the breadth of research taking place in the college, while providing a forum for general exchange of ideas within the college, bringing research active college community together for lively discussions.

ENGR 01798: Doctoral Dissertation Continuation 9 s.h.
Prerequisites: 12 or more Credits of "Doctoral Research and Dissertation" (ENGR 01799) & Department Approval
Continuation of supervised research leading to a doctoral dissertation.

ENGR 01799: Doctoral Research and Dissertation 1 to 9 s.h.
Prerequisite: Ph.D. student status
One of the primary goals of the Ph.D. in Engineering program is to teach the candidate how to identify unsolved problems in engineering, formulate a hypothesis for a feasible solution, design experiments or analysis methodologies to implement the proposed solution, and analyze results and draw conclusions. All of these require critical and analytical thinking and problem solving skills. Achieving such a goal requires methodical and persistent effort over a long period of time for obtaining command of the general body of knowledge as well as the state-of-the-art in the area of interest, followed by

identifying an unsolved problem that is worth solving, followed by developing and verifying solution(s) and finally disseminating the new knowledge created by this process. Since this is a long term process, it can only be achieved by dedicating significant time and effort to this process. Doctoral Research and Dissertation is a variable-credit independent study based research course that is designed to provide the student necessary time and guidance to help him/her achieve the aforementioned goals. Students are expected to take appropriate number of credits of this class each semester they are materially involved with doctoral research, culminating with preparation, execution, and defense of the Dissertation. Each section of this course is associated with a faculty member, and each student will take that section of this course that is associated with his/her Ph.D. Advisor, who will be guiding the student's doctoral research.

ENGL 02116: Introduction to Global Literatures in English 3 s.h.
This course introduces essential critical methods for the study of literature in relation to major works of global literatures written in English. Though the choice of specific texts will vary depending upon the instructor, this course focuses on works of literature in English beyond those written in America and the British Isles. It fulfills the "Global Literacy" requirement of the Rowan Core.

ENGL 02530: Diversity, Equity, and Inclusion in U.S. Literature 3 s.h.
This class explores the ways literary texts enforce, subvert, or otherwise complicate constructions of race, ethnicity, class, gender, age, physical ability, religion, and/or sexual orientation. The course will address topics such as the formation of identity, both personal and cultural; privilege and exclusion; assimilation and the myth of the melting pot; immigration; geographical and metaphorical borderlands; and the complexities of ethnic, religious, and political nationalism.

ENGL 02605: Graduate Studies in Adolescent Literature 3 s.h.
This course will introduce students to a range of literature written for, read by, and/or taught to adolescents. Students will analyze literary works from a variety of theoretical perspectives (including formalist, psychoanalytic, Marxist, postcolonial, ecological, feminist, and queer) to think about the cultural construction of adolescence and adolescents' relationship to power. This course may not be offered annually.

ENGL 02617: Teaching Shakespeare 3 s.h.
This course begins by examining representative plays by Shakespeare using the approaches of "Understanding by Design." Next, it considers how to teach the plays with those approaches, especially "essential questions" and "backward design." This course may not be offered annually.

ENGL 02638: Teaching World Literature 3 s.h.
This course will mix theory and world literature in order to provide students with a critical vocabulary they can employ in their own pedagogy. The course will explore a number of questions about individual, community, nation, time, space, language, and other topics through poetry, novels, drama, and short stories from Africa, Asia, and South America.

ENGL 05301: American English Grammar 3 s.h.
This course emphasizes traditional grammar and seeks to give students a practical understanding of the structure of contemporary American English grammar.

ENGL 05501: Teaching American English Grammar 3 s.h.
Teaching American English Grammar provides an introduction to the history of the English language, including a short history of grammar instruction; a review of traditional grammar, along with an overview of other grammatical approaches to English; and the opportunity to explore strategies for teaching grammar to both native and non-native speakers of English, with attention to how grammatical choices affect rhetorical style and effectiveness.

ENT 06504: Strategic Project-Based Experience 3 s.h.
This course is designed to provide strategic focused field based project learning experiences and opportunities for graduate students by affording them the opportunity to work with a wide variety of public and private organizations. The course uses a team-based approach to offer consulting advice to organizations with the goal of improving their performance. The emphasis in the course is on experiential approaches that provide a participative type of learning about the crucial issues faced by organizations. This course is interdisciplinary in nature and open to all graduate students.

ENT 06505: Entrepreneurship And Innovation 3 s.h.
Prerequisites (effective Spring 2009): ACC 03500 andMGT 06502 and MKT 09500
This course provides a broad framework for understanding the nature of entrepreneurship in multiple organizational settings. The course introduces students to the innovation and idea generation process and helps students apply an alternative way of "thinking" to assist in solving difficult issues for government, business, and the non-profit sector.

ENT 06506: Corporate Entrepreneurship 3 s.h.
This course provides an overview of the potential for innovation and entrepreneurial opportunities or new ventures within a corporate environment. The course covers various aspects of corporate entrepreneurship. Major topics include understanding the corporate entrepreneurial revolution, learning about the nature of entrepreneurship within established organizations (intrapreneurship), understanding the requirements for setting up an environment conducive to being intrapreneurial within a corporate setting, and learning about the entrepreneurial direction of firms as they grow and evolve. Among the issues discussed are the role of creativity within corporate entrepreneurship, the relation to product innovation and technology, the importance of corporate strategy within an entrepreneurial framework, and what it takes to create an entrepreneurial culture in a corporate setting.

ENT 06520: Evolution of the Cannabis Industry 3 s.h.
This industry analysis course forces students to develop a deep understanding of the cannabis industry, its history, competitive dynamics, opportunities for innovation, and the current business landscape. A historical overview will address the origins of cannabis, 19th century legal uses, early prohibition, counterculture, the war on drugs, state medical legalization, new approaches to adult use, and current and potential future federal laws. An overview of the cannabis plant will review hemp vs. marijuana as well as products, ingestion methods, and the Endocannabinoid system. An overview of laws and regulations will include federal vs. state vs. local, complexities in the system, provisions relating to medical vs. adult use (recreational). Social equity will be focused on from perspectives including the lasting effects of the war on drugs, reinvesting in communities disproportionately impacted, racial and social justice. Key points on cultivation will be reviewed such as plant science, facilities, financials, and regulatory compliance. Definitions and examples of business types in categories of plant-touching vs. ancillary will be addressed. Drivers of demand will be examined such as medical and adult (recreational) use, health and wellness, current and projected demographics, and genetics of plant strains. Analysis of the economics of cannabis will be analyzed including markets across the industry, potential economic impact, public policy implications, and financial barriers to entry. Considerations for retail in cannabis will include products, in-store experiences, in person retail and tech-based platforms for ordering and delivery, and social consumption via lounges, concerts, and other public venues.

ENT 06521: BUS MODEL INNOVATION CANNABIS 3 s.h.
Prerequisite: ENT 06520
Students in this course will explore business model innovations that are applicable across industries, and will also delve into concepts and constructs that are unique to the highly regulated and rapidly evolving cannabis industry. In exploring contemporary business models and corporate structure students will learn about common patterns and how to systematically understand, design, and implement a game-changing business model--or analyze and renovate an old one. Key elements for business model innovation across all industries to be analyzed include customer segments, value propositions, channels, customer relationships, revenue streams, key resources, key activities, key partners, and cost structure. Student will learn how to identify, create, and deliver value for existing and future customers, as well as extract value for a corporate venture in a sustainable manner. Fundamentals of new venture financing will be considered, such as capital structures for new ventures (e.g. debt vs. equity), term sheets and how to negotiate them, early-stage vs. later-stage financing. Cannabis-specific business model implications will be explored in depth as well. This include trademarks and IP, marketing and branding, multi-state operators (MSOs) vs. standalone businesses, challenges and benefits of vertical integration, costs for licensing and compliance, and rules and regulations regarding plant-touching vs. ancillary business. Students will also learn about the most challenging financial hurdles for plant-touching cannabis entrepreneurs and operators: banking (given that most national institutions are not willing to support due to federal illegality) and IRS 280E Tax Code (no deductions or credits are allowed due to federally controlled substance).

ENT 06555: Driving Innovation 3 s.h.
Students in this course will work to gain an in-depth understanding on the role that innovation plays in driving process and cost efficiencies, strategy development, decision making, addressing customer demands and market trends, financial performance, and business growth. Key models from Entrepreneurship will be analyzed for learning how to target and implement innovation.

ENT 06599: Special Topics In Entrepreneurship 0 to 6 s.h.
Students will study advanced level topics in Entrepreneurship. The exact topics will change over time to remain relevant as practices in industry and markets evolve. Contact the MBA office for additional details.

EVSC 01525: Advanced Global Field Study 4 s.h.
This graduate course combines classroom-based and field -based instruction to introduce students to environments beyond campus. This intensive but unique learning experiences help students make the connection between lecture and environmental practice in a range of ecosystems and physical environments.

EVSC 04510: Earth's Environment and Natural Systems 3 s.h.
A staggering diversity of natural environments covers Earth's surface in a beautiful and complex mosaic. Environmental professionals must understand how humans fit within the context of natural systems and how human activities alter these systems. Students in this course will gain a foundational knowledge of Earth's natural systems upon which they can build these understandings. This course will provide an overview of Earth's natural systems that covers land and sea and stretches from pole to pole. Students will learn how abiotic factors (e.g. temperature, water, light) control how these natural systems are distributed and gain knowledge of the global-scale cycles (e.g. water, carbon, nitrogen) that tie all these systems together.

EVSC 04511: The Science of Climate Change 3 s.h.
Due to climate change, our Earth systems are currently undergoing, and will continue to undergo in the future, alterations on a global scale. Scientific evidence reveals the staggering nature and extent of these changes that can already be seen in our world, and indicates that, without significant action, we are on a trajectory to see far more severe impacts to the natural world that modern civilization interacts with and depends upon every day. As we face the unprecedented challenge of combating climate change and its impacts, our hope lies in furthering our understanding of the problem and its potential solutions. Students in this course will 1) gain an understanding of the science behind climate change 2) discover the impacts of anthropogenic climate change 3) become familiar with possible adaptation and mitigation strategies from local to global scale, and 4) develop the skills needed to promote discussion of this important issue and possible ways to address it. Students will leave this course with an understanding of global change that is essential for today's environmental professionals, as they navigate the ever-growing challenges presented by a changing climate.

EVSC 04512: Applied Ecosystem Services 3 s.h.
A considerable body of scientific research has shown that biodiversity is crucial to humanity's survival and well-being. In recent decades, the term "ecosystem services" has been used to describe the many ways in which biodiversity and functioning ecosystems sustain and fulfill human life. In this course, students will learn about the types of ecosystem services, including supporting, provisioning, regulating, and cultural services. Students will also learn about the consequences of biodiversity losses on food production, such as greater susceptibility to crop losses and increased pest problems, and effects on public health, including the "Dilution Effect": greater prevalence of human diseases that accompanies species loss of plant and animal species.

EVSC 05550: Principles of Green Energy 3 s.h.
The production and consumption of energy is one of the most crucial issues in sustainability. Our past and present use of fossil fuels and non-renewable resources to generate energy has created significant ecological and environmental damage, and has contributed measurably to global climate change. With an ever-increasing human population, it is critical that we address our energy needs in a way that will minimize the impacts to planet Earth going forward. In this course, students will learn about the historical and contemporary generation of energy, and will explore the latest renewable and efficient methods. There will be a heavy emphasis placed on application of concepts to current and future energy challenges, and students will learn about how to implement optimization sequences using real world problems.

EVSC 05560: Industrial Health and Safety 3 s.h.
This is a three credit graduate course that focuses on the safe handling of hazardous materials based upon their chemical and physical properties. The course, by way of design, also meets the OSHA training requirements found in 29 CFR 1910.120 for certification as a "40–Hour HAZWOPER" trained individual. A minimum of 40 hours attendance as well as 70% on the final exam in addition to a required practical portion of the course must be successfully completed in order to receive training certification. If earned, the training certification is valid for one (1) year.

EVSC 05605: Case Studies in Applied Environmental Science 3 s.h.
Prerequisite(s): EVSC 04510 AND EVSC 04512
The role of environmental professionals is to understand how human activities impact or alter environmental systems or human health and propose strategies to prevent or ameliorate these negative outcomes. One of the key challenges that they face is translating their understanding into professional or technical documents that can be understood by decision-makers and stakeholders who do not have their background in environmental science. Generating high quality professional deliverables is a critical job skill that is foundational to a career in environmental science. Students in this course will analyze multiple professionally-relevant environmental case studies, become familiar with the types of technical documents required in each case, and practice writing a subset of these documents. These may include environmental impact statements, community update reports, environmental permit application and compliance documents, or other relevant and timely documents.

EVSC 05610: ENVIR SUPPORT SYSTEMS: SOILS 3 s.h.
Prerequisite: EVSC 04510
Soils are the dynamic interface between human activity, food production, and Earth system processes. In this course students will receive an overview of the physical, chemical, and biological characteristics of soil, followed by a thorough investigation of soil's role as an environmental support system for humans and wildlife. Global soil resources are crucial for maintaining food production, clean drinking water, carbon cycling, nutrient cycling, and ecosystem dynamics. Students will learn about human impacts on soils, and best practices towards optimizing soil health and subsequent societal benefits. This

course is suitable for environmental science graduate students.

EVSC 05612: Environmental Support Systems: Fresh Water 3 s.h.
Prerequisite: EVSC 05410
Fresh water is a necessary environmental support system for every aspect of human life, from drinking water to food production to energy generation to industrial activity. In this course, students gain an environmentally-grounded understanding of fresh water resources that allows them to engage with the complex debates that often surround their use and management. Students will learn about fresh surface and groundwater resources, how water moves through these environments, how human activities alter the chemistry, quality, and availability fresh water, and how these resources can be managed for sustainable use.

EVSC 05613: Environmental Support Systems: Native Plants in the Landscape 3 s.h.
This course will give students a scientific foundation for understanding why native plants are critically important to ecosystems, and to recognize the problems that arise when non-native invasive plants replace them in natural and disturbed environments. This course is necessarily interdisciplinary, and during the semester there will be discussions about topics ranging from evolutionary theory, conservation, restoration ecology, agriculture and public health. This course will employ classroom and field components, with an emphasis on the observation of plants in disturbed (urban, suburban, agricultural) and natural ecosystems. Students will become familiar with the ways native plants can be used in stormwater management, rain gardens, green roofs, and landscaping. Emphasis will be placed on applying gained knowledge towards creating sustainable and practical solutions to current problems. This course is suitable for any major.

EVSC 05620: Research Design in Environmental Science 3 s.h.
Obtaining valid environmental data depends on well-conceived research plans. In this course students will learn to design studies and experimental data and how those data can be analyzed to draw evidence-based conclusions. Students will become familiar with sampling design and how observational, comparative, correlational, and experimental approaches can be used to test hypotheses. Students will also become familiar with the responsible conduct of research.

EVSC 05630: Communicating Environmental Science 3 s.h.
It is imperative that scientists be skilled in communicating key scientific concepts and findings, not only to their colleagues, but also to the general public. This is especially true for environmental science professionals, as they strive to understand and combat the unprecedented global environmental crisis that our planet is facing due to anthropogenic climate change. Students in this course will 1) hone their scientific writing and presentation skills, 2) develop the tools necessary to translate technical and complex scientific concepts and findings to broad and diverse audiences, and 3) become skilled in using a broad range of communication formats to reach a variety of audiences.

EVSC 05660: Risk Assessment 3 s.h.
Prerequisite: EVSC 04510
Large scale anthropogenic processes can potentially have harmful impacts on human and environmental health. Policy-makers, managers, and stakeholders depend on accurate environmental risk assessments to learn the facts about environmental stressors and their effects on individuals and ecosystems. Risk Assessment is a transdisciplinary, multifaceted approach to solving public and environmental health science problems because it combines the key principles of exposure sciences (through assessment of exposure), toxicology (through hazard identification), and modeling (through dose-response assessment) to characterize risks from biological, chemical, or physical agents and public health situations. In this course, students will explore all of the major components of risk assessment and learn how to make the critical calculations related to risk exposure. Students will also explore the underlying assumptions of risk assessment and consider their implications for policy and public health.

EVSC 05685: Applied Environmental Science Graduate Clinic 3 s.h.
Prerequisite: EVSC 05605
Students apply knowledge gained through their previous coursework to solve a particular research problem of their choice within the broad scope of environmental science. Students have the opportunity to work in class, and may choose to work individually or in teams.

ENGR 01591: Independent Graduate Study In Engineering 0 to 4 s.h.
This course is designed for graduate engineering students. They will conduct work under the supervision of an appropriate faculty member on engineering projects. The execution of the proposed project, including the preparation and presentation of an acceptable report of work, will be required.

ENGR 01660: Research Design in Engineering Education 3 s.h.
This course will describe research design in the context of engineering education. It will provide an overview of theoretical frameworks, development of research questions, types of methods (both quantitative and qualitative), as well as discuss research quality. Students will also learn how to critique engineering education research on the basis of its design and research quality. The emphasis will be placed on research design for studies focused on the research to practice continuum.

XEED 01601: Effective Teaching in Academic, Corporate and Government Settings 3 s.h.
Prerequisite(s): Ph.D. student status
This unique course, team-taught by faculty and professionals in education, engineering and industry, provides students with an in-depth exploration of effective teaching practices in academic, corporate, and government settings. Students will gain a broad view of the role and function of teaching and oral presentation, as well as how to communicate effectively in these settings. Specifically, this course will introduce instructional methods and strategies, adult learning theory and implications for effective teaching, documenting and assessing student learning, and how to improve instruction in academic, corporate, and government settings. Several real-world scenarios will be discussed and simulated, including preparing academic courses and corporate training packages, assessing audience background and setting appropriate technical rigor and level, building classroom / meeting room / presentation room management skills, conflict avoidance and resolution in such settings; effective strategies for delivering technical content at meetings and conferences, and answering audience questions that may be adversarial in nature. The course will provide readings, discussions, assignments, and most importantly ample opportunities for practice teaching, including a semester-long apprenticeship with Engineering faculty, allowing the student to experience all aspects of teaching and classroom management. The course will also feature guest speakers from industry and government agencies providing unique perspectives for effective teaching and presentation at such settings.

XEED 01650: Engineering Education Fundamentals 3 s.h.
The purpose of this course is to provide students with foundational knowledge about the field of engineering education. As such, students will learn about the history of engineering education and its evolution, the breadth of research areas that are investigated within engineering education, current issues facing the field, and primary stakeholders involved within engineering education.

XEED 01660: Research Design in Engineering Education 3 s.h.
This course will describe research design in the context of engineering education. It will provide an overview of theoretical frameworks, development of research questions, types of methods (both quantitative and qualitative), as well as discuss research quality. Students will also learn how to critique engineering education research on the basis of its design and research quality. The emphasis will be placed on research design for studies focused on the research to practice continuum.

ENST 94501: Sustainable Commerce 3 s.h.
Students will examine the historical and philosophical origins of sustainability and competing/related concepts like sustainable development, resilience, ecological modernization, de-growth, the pollution-as-externality concept, and environmental justice. These critiques of market capitalism are examined as an entry point for understanding not only environmental problems themselves, but also the positive contributions to sustainability that business and commerce can make, if properly structured. The impacts of "green" industries, products, and business practices are also examined. This course may be offered online.

ENST 94502: Sustainability Assessment 3 s.h.
Students will learn different approaches for setting sustainability goals, measuring progress towards sustainability outcomes, and managing so-called "sustainability transitions." Students will learn about the increasingly important role of sustainability officers in different firms, and gain exposure to concepts and practices in sustainability reporting for both shareholder, regulatory, and scientific purposes. This course may be offered online.

ENST 94503: Perspectives on Environmental Regulation, Policy, and Law 3 s.h.
Students will engage in an intensive overview of state, federal, and international environmental policies, regulatory structures, and laws. Students will learn the history of environmental law and policy in the US and around the world, as well as the environmental regulatory toolkit and how it relates to commercial activity. Topics will include command-and-control regulation, market-based incentives, consumer education, and 'nudges' towards behavioral change. This course may be offered online.

ENST 94504: Topics in Sustainability Innovation and Problem Solving 3 s.h.
Students in this seminar/practicum type class will study the implementation of sustainability transitions, in the context of current events and emerging ideas related to sustainability studies. Students will identify industries and/or societal challenges that could benefit from sustainability thinking and develop plans for implementing a new product, system, or structure. This course may be offered online.

GEOG 06501: Independent Study Geography 3 s.h.
This course provides individual enrollment semester hours in directed study and/or research under the supervision of a faculty member. Topics will vary.

GEOG 06553: Workshop In Geography 1 to 3 s.h.
This course is designed for in-service teachers who wish to further develop their competencies in new teaching techniques and technologies in geography, including computer-assisted instruction and computer cartography. Contemporary geographic topics will be explored within a regional context of each major world region. Students will actively participate in applying new concepts, current data, and innovative techniques in geography by designing and presenting sample lessons at their grade level. (Summer only)

GEOG 16100: Earth, People, And The Environment 3 s.h.
This course provides a broad survey of the geographic approach to knowledge about the world and the field of geography. The course introduces the natural order of the physical environment, human modification of environments, organization of society, and regional studies. The course places particular emphasis on contemporary environmental problems and the role of geography in helping to understand and address local, regional, and global issues.

GEOG 16110: Cultural Geography 3 s.h.
This course focuses upon the varied and changing cultural environments of the world. Through a synthesis of data from many disciplines (i.e., anthropology, ecology, earth sciences, history, etc.), major cultural differences and areal patterns are identified and analyzed.

GEOG 16140: World Regional Geography 3 s.h.
A survey of the entire world that uses the regional approach to geographical analysis, this course provides students with a basic foundation of geographic knowledge and concepts applicable to the contemporary world. It stresses resource distribution, environmental characteristics, population problems, food and water supplies, cultural variations and developmental strategies.

GEOG 16160: Digital Earth: Mapping and Geographic Information Science 3 s.h.
This course provides the student with the conceptual tools required for intelligent and critical use, interpretation and analysis of maps. In addition, the course furnishes the student with an introduction to and overview of the mapping sciences. Students learn the concepts, methods, and techniques common to the several branches of the mapping sciences and are introduced to cartography, satellite remote sensing, computer-assisted cartography, and geographical information systems. Because of its increasing importance, special emphasis is placed on geographical information systems. This course fulfills the Rowan Core Artistic Literacy.

GEOG 16260: Fundamentals of Geographic Information Systems (GIS) 4 s.h.
Prerequisites: GEOG 16160
Fundamentals of Geographic Information Systems introduces students to the concepts and applications associated with creating, maintaining, analyzing, displaying, and interpreting geospatial data. Through the completion of activities and assignments, students gain experience with the fundamental tools for geospatial analysis, coupled with the knowledge of how best to apply them to real-world issues in the natural and human landscapes.

GEOG 16261: Cartography 3 s.h.
Prerequisite: GEOG 16160
This course studies the elements of cartography with emphasis on the map as a basic form of communication. It explores contemporary design concepts and various graphic techniques. Students create cartographic compositions using the latest in geographical information system and cartographic software using the facilities of the department's computer teaching laboratory.

GEOG 16290: History & Methods of Modern Geography 3 s.h.
Prerequisite: Any two of the following courses: GEOG 16100,GEOG 16110,GEOG 16130,GEOG 16140, GEOG 16160
This course provides the theoretical foundation to the field of geography. It explores the different bodies of thought and methodological practices which have shaped the character of geography from the late 19th century to the present. This exploration will cross the traditional sub-disciplinary divisions of human geography, physical geography and GIScience, examining the ways in which all three have been woven together and pulled apart by broad intellectual trends in the discipline. When the course is finished, students should be able to place their own research into disciplinary context, and gain a useful perspective on the similarities and differences between contemporary geographic subfields, and their methods, as contingent, historical products.

GEOG 16307: Transportation Planning and Policy 3 s.h.
This course provides an introduction to transportation planning and policy in the 21st Century United States context. The course examines all aspects of the modern transportation system, from questions of accessibility and financing to equity and sustainability. Students will acquire a comprehensive knowledge of how transportation systems work and how our society will need to improve them in the near future.

GEOG 16334: The Geography of Natural Disasters 3 s.h.
There are thousands of examples in which the forces of nature have suddenly claimed human lives and destroyed manmade constructions on a large scale. This course will introduce the nature, causes, risks, effects, and prediction of natural disasters including earthquakes, volcanic eruptions, landslides, subsidence, global climate change, severe weather, coastal erosion, floods, mass extinctions, and meteorite impacts. It will cover geologic principles and case histories of natural disasters and human responses (societal impact, mitigation strategies, and public policy).

GEOG 16350: Quantitative and Qualitative Methods 3 s.h.
This course introduces quantitative and qualitative techniques designed especially for analysis of spatial patterns and distributions. Students will learn a variety of inferential statistical methods, including basic elements of sampling, analysis of variance, and probability. Students will also learn how to combine knowledge learned from these methods with qualitative methods such as interviews, focus groups, and observation.

GEOG 16360: Applications of Geographic Information Systems 3 s.h.
Prerequisite(s): GEOG 16260
Applications of Geographic Information Systems builds upon the foundational concepts introduced in pre-requisite courses to examine the concepts and techniques of advanced geospatial analysis. Building upon a series of techniques, coupled with real-world applications, students employ geospatial data and methods to complile, analyze, visualize, and interpret results, as well as examine critical issues related to data management and maintenance. The course is intended to prepare the student for both the professional GIS workforce and advanced research with GIS.

GEOG 16361: Geovisualization 3 s.h.
Prerequisite: GEOG 16160
This course explores geovisualization and related GIS and cartographic techniques. Geovisualization communicates geospatial information in ways that allow for data exploration and decision-making processes. Techniques covered include temporal modeling of processes over time and 3D fly-thru of virtual terrain. The techniques are applied to real-world problem solving in fields such as environmental modeling, planning, archeology, crime mapping and natural resource management.

GEOG 16370: Drones, Planes, and Satellites 3 s.h.
Prerequisite: GEOG 16160
This course introduces students to techniques of spatial analysis using satellite imagery and aerial photography. It intersperses practical exercises in photo interpretation and digital image processing with demonstrations that include a wide range of photographic and non-photographic source material, including infra-red thermal and micro-wave images, digital orthographic photos as well as LANDSAT and other satellite platforms.

GEOG 16375: Remote Sensing Of The Environment 3 s.h.
Prerequisite: GEOG 16260
This course emphasizes the integration of remotely sensed data into geographic information systems (GIS). It includes applications of advanced remote sensing techniques and data processing for use in environmental planning and land resource management. This course may not be offered annually.

GEOG 16390: Geography Research Clinic/Studio 1 to 6 s.h.
This course presents a project-based experience for students working with a faculty mentor. Modeled on the engineering clinic and a traditional planning studio, students apply knowledge gained through their previous coursework to solve a particular research, policy or planning problem. Projects will be solicited from local agencies and businesses and students will work as individuals or within teams to provide viable solutions.

GEOG 16391: Directed Geographic Field Experiences 3 s.h.
This course offers an introduction to geographic field research methods, class field trips to places chosen by instructor and students. Students will complete a field research project taken on a topic chosen in consultation with the instructor. This course may not be offered annually.

GEOG 16462: Web-Based GIS Mapping 3 s.h.
This course introduces web-based mapping technologies and applications. Students will gain the skills of creating their own map services which can then be used to create custom web-based maps. The course will focus on both open-source and commercial software packages to produce mapping and data services. Students will also explore the client-side offerings to produce mapping applications. The course culminates in a final web mapping project.

GEOG 16550: Selected Topics in Geography, Planning, & Sustainability 1 to 3 s.h.
Pre-requisite: Permission from instructor
This course is designed to introduce students to emerging topics in Geography, Planning, & Sustainability. The content will vary according to the interests of the students and expertise and availability of faculty. The course contributes to the preparation of students for careers in the Urban and Regional planning profession. The course may also provide necessary foundational knowledge for a subsequent specialized studio course. Permission of instructor to enroll is required. Otherwise, the course is available to both program and non-program graduate students who wish to use the course as an elective.

GEOG 16553: Workshop In Geography 1 to 3 s.h.
This course is designed for in-service teachers who wish to further develop their competencies in new teaching techniques and technologies in geography, including computer-assisted instruction and computer cartography. Contemporary geographic topics will be explored within a regional context of each major world region. Students will actively participate in applying new concepts, current data, and innovative techniques in geography by designing and presenting sample lessons at their grade level. (Summer only)

GEOG 16560: Digital Earth: Mapping and Geographic Information Science 3 s.h.
This course provides the student with the conceptual tools required for intelligent and critical use, interpretation, and analysis of maps. In addition, the course furnishes the student with an introduction to and overview of the mapping sciences. Students learn the concepts, methods, and techniques common to the several branches of the mapping sciences and are introduced to cartography, satellite remote sensing, computer-assisted cartography, and geographic information systems. This course is targeted toward graduate students and serves as a prerequisite for Fundamentals of Geographic Information Systems or another program elective.

GEOG 16561: Cartography 3 s.h.
Prerequisite(s): GEOG 16560 or GEOG 16160 or permission of the instructor
This course studies the elements of cartography with emphasis on the map as a basic form of communication. It explores contemporary design concepts and various graphic techniques. Students create cartographic compositions using the latest in geographical information system and cartographic software using the facilities of the department's computer teaching laboratory. This course is targeted toward graduate students.

GEOG 16562: Web-Based GIS Mapping Geography 3 s.h.
Prerequisite(s): GEOG 16160 or GEOG 16560
This course introduces web-based mapping technologies and applications. Students will gain the skills of creating their own map services which can then be used to create custom web-based maps. The course will focus on both open-source and commercial software packages to produce mapping and data services. Students will also explore the client-side offerings to produce mapping applications. The course culminates in a final web mapping project. This course is targeted toward graduate students.

GEOG 16565: Geographic Information Systems (GIS) Topics And Applications 3 s.h.
Geographic Information Systems (GIS) Topics and Applications provides an extended exploration into geospatial science and analysis at the graduate level. Students develop advanced GIS skills through a project-based approach culminating in a final project and presentation. The course deepens the understanding of raster and vector data structures as well as the ability to work with computational algorithms used in GIS analysis. Students learn through lectures, demonstrations, computer laboratory sessions and a project paper and presentation.

GEOG 16575: Remote Sensing of Environment 3 s.h.
Prerequisite(s): GEOG 31660
This course emphasizes the integration of remotely sensed data into geographic information systems (GIS). It includes applications of advanced remote sensing techniques and data processing for use in environmental planning and land resource management. This course may not be offered annually. This course is targeted toward graduate students.

GEOG 16591: Independent Study in Geography 3 s.h.
This course provides individual enrollment semester hours in directed study and/or research under the supervision of a faculty member. Topics will vary.

GEOG 16661: Geovisualization 3 s.h.
Prerequisite: GEOG 31660
This course explores geographic visualization (Geovisualization) and related cartographic and graphic design techniques. The course content is primarily focused on GIS-based spatial planning, design, analysis, and 2D/3D visualization techniques. Students are exposed to the basic knowledge of using GIS and Geovisualization in site analysis, site design, public participatory GIS (PPGIS), and design charrettes. The concepts of qualitative Geovisualization and other emerging tools and techniques are also introduced.

GEOG 16670: Drones, Planes, and Satellites 3 s.h.
Prerequisite(s): GEOG 16160 or GEOG 16560
This course introduces students to techniques of spatial analysis using satellite imagery and aerial photography. It intersperses practical exercises in photo interpretation and digital image processing with demonstrations that include a wide range of photographic and non-photographic source material, including infra-red thermal and micro-wave images, digital orthographic photos as well as LANDSAT and other satellite platforms. This course is targeted toward graduate students.

GEOG 31660: Fundamentals of Geographic Information Systems 4 s.h.
This course introduces students to the concepts and applications associated with creating, maintaining, analyzing, displaying, and interpreting geospatial data. Through the completion of activities and assignments, students gain experience with the fundamental tools for geospatial analysis, coupled with the knowledge of how best to apply them to real-world issues in the natural and human landscapes. This course is suitable for planners, geographers, and relevant professionals.

PLAN 31280: Foundations of Planning and Environmental Planning 3 s.h.
This course provides students with a conceptual foundation to the field of planning. Topics include the history and development of planning, the politics of planning, planning analysis and implementation, urban design, environmental planning and planning implementation process and management. Particular emphasis is placed on the current trends in the field including ecological based planning, redevelopment and sustainable communities.

PLAN 31383: Metropolitan/Regional Planning 3 s.h.
Prerequisite: PLAN 31280
This course studies the philosophy, history, techniques, and problems of metropolitan and regional planning. Although it focuses on large scale-planning in the United States, the course makes some comparative analysis of planning in other countries. It emphasizes geographic techniques in regional analysis, as well as the roles of federal, state, and local agencies in planning. Students learn and use simulation and gaming techniques in the preparation of regional plans. This course may not be offered annually.

PLAN 31386: Land Use And Conservation 3 s.h.
Prerequisite: PLAN 31280
This course examines people's changing perceptions of the economic use potential of land focusing on how land is a combination of physical, economic, political and cultural interactions. The course explores the basics of land use law, property rights, land use conflicts and the various avenues for land conservation and open space preservation.

PLAN 31540: Advanced Historic Preservation 3 s.h.
This course introduces students to the practice of historic preservation as undertaken by urban and regional planners. Students learn about different philosophical approaches to preservation, as well as cultural awareness of different types of and needs for preservation. Students learn the legal and regulatory aspects of historic preservation, as well as how to gather information about historic properties, buildings, and other spaces in order to advance preservation efforts. Preservation technologies are examined, as are efforts to advance goals of sustainability within preservation.

PLAN 31580: Introduction to Planning: Past, Present, and Future 3 s.h.
This course focuses on the comprehension, representation, and use of ideas and information in the planning field, including appropriate perspectives from history, social science, and the design professions. Course content offers the primary reasons planning is undertaken by communities, cities, regions, and nations, and the impact planning is expected to have. Specific topics include history of human settlements, planning history, planning theory, global dimensions of planning, and planning processes to influence the future.

PLAN 31587: Graduate Seminar in Food Systems Planning 3 s.h.
This graduate level course explores the food supply chains within the US that brings food from the field to the table and describes the ways that planners are utilizing traditional planning tools to build more sustainable and resilient regionally based food systems. Students will compare both conventional and alternative supply chains identifying the benefits and limitations of both, as well as examine the policy and programmatic initiatives taken by planners to maximize these benefits and minimize these limitations. Additional topics include land conservation, food access, urban agriculture and economic development.

PLAN 31589: Environment and Sustainability Planning 3 s.h.
Prerequisite: PLAN 31580
This course offers a broad understanding of sustainability and environmental factors in planning from a local to global perspective. It explores environmental, economic, and social/political factors that contribute to sustainable communities, and investigates the role of planning processes in the creation of sustainable futures. The course examines planning's implications on individual and community health within the built environment. Course materials also discuss key issues in equity, diversity, and social justice that emphasize the planner's role in expanding choice and opportunity for all.

PLAN 31590: Research Methods in Planning 3 s.h.
This course introduces quantitative and qualitative methods and modeling tools, and their applications to planning research and planning practice, including forecasting, policy analysis, and design of projects and plans. Students learn how to pose clear and researchable questions relevant to urban and regional planning, collect and process data, analyze data using quantitative or qualitative research tools, and present results using clear, accurate, and compelling text, graphics, and maps to a variety of audiences, including other planners, citizens, and public or elected officials. They also learn tools for assembling and analyzing ideas and information from prior practice and scholarship.

PLAN 31593: Planning Communication 3 s.h.
The aim of this course is to prepare students for planning and relevant professions by ensuring that they are aware of and trained in proper professional communications standards. Students recognize the need for appropriate outreach strategies for communicating with the public and gain knowledge to develop and utilize tools for effective in-person or virtual stakeholder engagement. In addition to basic written, oral, and graphical communication skills, this course introduces skills related to leadership, team building, facilitation, mediation, community motivation development, and strategic decision making.

PLAN 31685: Planning Practice, Law, and Ethics 3 s.h.
Prerequisite: PLAN 31580
This three-module course prepares students for the professional planning field by introducing topics related to planning practice, planning law, and planning ethics. The first module is focused on the roles of officials, stakeholders, and community members in planned change. It also introduces economic, infrastructure, social, and cultural factors to urban and regional growth and change. The second module provides legal and institutional contexts within which planning occurs. The final module presents key issues of planning ethics and related questions of the ethics of public decision-making, research, and client representation.

PLAN 31686: Community Planning, Engagement, and Design 3 s.h.
Prerequisite(s): PLAN 31580 and PLAN 31589
This course introduces various planning methods applied in community planning, community engagement, and community design activities by using a Diversity, Equity, and Inclusion (DEI) framework. The course content focuses on spatial or physical planning topics such as the design, arrangement, appearance, and functionality of building sites, neighborhoods, towns and cities, as well as the shaping and uses of safe public spaces. The course also explores sustainable design principles, techniques, and practices related to spatial or physical planning. Students explore design elements at both macro and micro scales and learn to incorporate those elements in workable urban design projects and community plans.

PLAN 31695: Planning Studio 6 s.h.
Prerequisite(s): PLAN 31580 and PLAN 31590 and PLAN 31593 and GEOG 31660 and PLAN 31589 and PLAN 31685 and PLAN 31686
Graduate planning students produce their capstone projects in this studio. Under direct supervision of planning faculty, students undertake a planning project in cooperation with a local, regional, national, or international client. Students apply their relevant knowledge and skills gained from all required as well as elective courses in this project. They work in small groups focusing on different aspects of planning. Whenever appropriate, students get engaged with community stakeholders and assess their interests. The final product of this studio is a professional-level plan or a policy report.

GEOL 01570: Research Experience in Geology 2 s.h.
The course provides students with research experience in geology as undergraduates. Student select a geology faculty mentor to conduct at least one semester of research. One semester of this course is required for both B.A. and B.S. degree majors, but two semesters is encouraged for B.S. majors.

GEOL 01701: Seminar in Geology 4 s.h.
The course is focused on teaching students how to critically evaluate scientific papers or current research endeavors to effectively articulate in writing and through oral presentation using precise language founded in science the content of papers. Students will be given various homework assignments that include but are not limited to discussion on papers or on other student presentations. This is a required course that all first year PhD students in Geology.

GEOL 01702: Avanced Seminar in Geology 4 s.h.
Prerequisite: GEOL 01701
The course is an extension of GEOL 01701 with a major addition. The course meets weekly with different topics presented each week. Students will be required to read a specific scientific paper with one or more students presenting on the merits and shortcomings of the research presented in the paper. The course is focused on teaching students how to critically conduct original research and present their research through written and oral mediums. Students are required to conduct new research, either in the laboratory or through literature reviews and present their findings for the entire cohort and professors and critical review each other's work through constructive feedback. This is a required course that all first year PhD students in geology must take and is equivalent to a laboratory course.

GEOL 01703: Proposal Writing and Grant Management in Geology 3 s.h.
In this course students learn about writing a proposal, the importance of setting clearly defined research goals, expected outcomes, milestones, statements of work, establishing a proper budget, and how to sell their research to a variety of funding sources. In addition, students learn how to manage a grant or contract once it has been awarded to a home institution, how to work effectively with a sponsored research office, the importance of progress reports in the form of abstracts and refereed papers, and closing out a grant. Students also learn how to critical review proposals. This is a required course that all first year PhD students in geology must take and is equivalent to a laboratory course.

GEOL 01704: Communication and Ethics in Geology 3 s.h.
In this course students learn about different methods of communication within science as well as the ethics of science and the workplace. The course explores the writing of different types of scientific papers, books and book chapters, the different kind of oral presentations, outreach to different audiences, and the overall importance of an ethical research, teaching, and outreach programs in science. This is a required course that all first year PhD students in geology must take and is equivalent to a laboratory course.

GEOL 01705: Graduate Colloquium 2 s.h.
In this course students are exposed to research in many areas of the School of Earth and Environment through its established colloquium series. This is a required course that all first year PhD students in geology must take.

GEOL 01706: Advanced Graduate Colloquium 2 s.h.
Building on the experience of GEOL 01705, the students will collectively as a course create and successfully run a colloquium series within geology. In this course students are exposed to research in many areas of research, how to invite speakers, how to successful operate a lecture series as a group. This is a required course that all first year PhD students in geology must take.

GEOL 01710: Fundamental Research 1 6 s.h.
In this course students will focus developing their dissertation research culminating in a successful candidacy exam (PhD dissertation proposal defense) at the end of the second year. This is a required course that all second year PhD students in geology must take.

GEOL 01711: Fundamental Research 2 6 s.h.
Prerequisite: GEOL 01710
This course is a continuation of Fundamental Research 1. In this course students will focus developing their dissertation research culminating in a successful candidacy exam (PhD dissertation proposal defense) at the end of their second year. This is a required course that all second year PhD students in geology.

GEOL 01712: Topics in Graduate Geology 3 s.h.
This course changes from semester to semester and will be topical in nature. The topics that will be covered will, in part, depend on the student cohort and the availability of professors. This is a required course that all second year PhD students in geology must take with two semesters required. The course is designed to help prepare students for their candidacy exams and dissertation research.

GEOL 01713: Advanced Topics in Graduate Geology 3 s.h.
Prerequisite: GEOL 01712
This course follows GEOL 01.712 in that it is a topical course that changes from semester to semester. The topics that will be covered will, in part, depend on the student cohort and the availability of professors. This is a required course that all second year PhD students in geology must take with two semesters required. The course is designed to help prepare students for their candidacy exams and dissertation research.

GEOL 01730: Dissertation Research in Geology 5 s.h.
Prerequisites: Successful completion of PhD qualification and candidacy examination.
In this course students will focus their attention on their dissertation research, the writing of papers to be published, and their PhD dissertation. This is a required course that all PhD students in Geology must take.

MBS 00501: Biochemistry and Molecular Biology 3 s.h.
We will be using Macmillan Launchpad as our information resource. I have already set up a course at the following website. This is an all-inclusive site that contains the E-book, learning exercises and quizzes. You will have to purchase a 6-month access for this site. Go to http://www.macmillanhighered.com/launchpad/tymoczko3e/8162223 This course will cover the broad topic of biochemistry. This starts with a basic understanding of thermodynamics and chemical bonds and leads into amino acids, proteins and enzymes as well as carbohydrate and lipid structure and function. We will also cover intermediary metabolism and provide a perspective of disease states. The intent is to learn biochemistry by studying and learning how proteins underlie human disease.

MBS 00502: Cell Biology 3 s.h.
This course is focused on biology and physiology of the cell and is organized around the central theme of homeostasis – how the cells adopt to various environmental changes while maintaining their internal constancy necessary for all tissues and organs to function. It is a course for both the basic scientists who seek general principles about cellular function, and the students preparing for health-related careers who wish to apply fundamental knowledge on cell biology to understand the molecular mechanisms of cellular dysfunction in human diseases.

MBS 00614: Molecular Mechanisms of Aging 2 s.h.
Prerequisite(s): MBS 00501, MBS 00502, MBS 00503 (Must pass each course)
The major goal of this course is to acquaint second-year Master's students with fundamental information regarding the aging-associated molecular pathways and to update them on the most recent advancements in the studies of molecular mechanisms of aging. The emphasis will be given to the discussion of the most popular aging theories, experimental attempts to improve longevity in animal models, and their critical analysis from the scientific standpoint. During the course, the students will be provided a solid understanding of the most popular subject in translational science that attracts billions of research dollars but is seldom taught as a conceptual course. It is a course for both the basic biomedical scientists who seek to understand the nature of aging and aging-associated processes, and the students preparing for health-related careers who are eager to expand their knowledge on "diseases and conditions associated with growing older, in order to extend the healthy, active years of life" (from the National Institute of Aging Mission Statement).

MBS 00615: Case Studies in Biology & Medicine 3 s.h.
Prerequisites: MBS 00501, MBS 00502, MBS 00503
This course is intended to help the student advance in the learning process. We will analyze topics of biological and medical interest and attempt to recognize and apply thought processes to understanding the biological phenomena or the clinical situation. The goal of this course is to go through case studies of biological and clinical significance and develop an appreciation for the levels of thought that are required to understand the underlying mechanisms and pathways and communicate about the topic under consideration.

MBS 00659: GSBS Maintaining Matriculation 0 to 9 s.h.
A Master of Biomedical Science program student who requires an additional semester to complete a course, especially a RowanSOM course that begins in the fall and ends in the spring, may register for GSBS Maintaining Matriculation during the subsequent semester. This course will carry a variable credit weight of 0-9 credits (5 credits are part-time status; 9 credits are full-time status). The GSBS office will be responsible for certifying that a student is completing a course in progress on a part-time or full-time basis commensurate with the number of credits they are registered for in the previous semester. The student will not be charged tuition or a fee for continuation regardless of the number of credits for which they are registered. A student can only register for GSBS Maintaining Matriculation for one (1) semester. This course is not graded.

MPI 00504: Topics in Molecular Pathology & Immunology 4 s.h.
This course provides the student with a factual understanding of key host/pathogen elements related to the development of human disease, in an introductory manner. The course will cover major human pathogens and their disease-causing mechanisms (Microbiology). In addition, the human immune system is presented in the context of host-defense against infectious and malignant disease (Immunology). Mechanisms of tumorigenesis and metastasis are explored (Cancer), as are the metabolic mechanisms underpinning diabetes, obesity and related disorders (Metabolic Diseases). Finally, shorter elements describe the creation, validation and standardization of new molecular diagnostic tools (Diagnostics); the critical

(statistical) evaluation of experimental data (Statistics); important elements of high-throughput screening and early stage drug discovery (Drug Discovery); an introduction to the discovery, mechanism of action, and resistance to antimicrobial agents (Antimicrobial Agents); as well as a discussion of the genetics of cancer and other diseases (Medical Genetics). Upon completion of the course, students will have gained a broad overview of the theoretic and practical aspects of the subjects that underlie the laboratory courses they may take in the future.

ATR 00105: Introduction to Healthcare in Sports Medicine 3 s.h.
This course focuses on the healthcare team and delivery systems. Students will learn about legal responsibilities, ethical issues, safety, infection control, communication, interpersonal behaviors, wellness, and disease as it pertains to Sports Medicine and providing optimal healthcare.

ATR 00220: Pathology and Evaluation of Orthopedic Injuries II 3 s.h.
Prerequisite(s): (ATR 00219 or PHED 35219) Corequsite: ATR 00239
This course provides an examination of the etiology, epidemiology, pathology and assessment of injuries and illnesses to the upper extremity, head, axial skeleton, chest, and thorax. Structural, functional and surface anatomy will be reviewed. In addition to didactic classroom time, students are also instructed, given time to practice and evaluated on pertinent athletic training psychomotor competencies and clinical proficiencies within a practical laboratory experience. There is an observational field experience associated with this class.

ATR 00339: Foundations in Sports Medicine II 3 s.h.
Prerequisite: ATR 00210
This is the second course in a series that will provide students with foundational knowledge that will be useful in preparing them to apply to the Athletic Training Program. This course will teach students principles of a systematic clinical evaluation, nutrition and its role in tissue healing, injury prevention and performance optimization, and therapeutic interventions.

ATR 00340: Foundations in Sports Medicine III 3 s.h.
Prerequisite: ATR 00339
This is the third course in a series that will provide students with foundational knowledge that will be useful in preparing them to apply to the Athletic Training Program. This course will teach students principles of prophylactic strapping and bracing, research methodology, and basic pharmacology. It will also cover the professional and dispositional requirements of the Professional Preparation component of the Athletic Training Program.

ATR 00341: Clinical Techniques in Athletic Training IV 2 s.h.
Prerequisite(s): (ATR 00340 or PHED 35340) Corequsite(s): ATR 00361
This course, designed for second semester seniors, will review and evaluate clinical proficiencies previously discussed in General Medical Conditions and Pharmacology and related topics relevant to previous course work. Students meet once per week in the Athletic Training Laboratory to practice and discuss topics pertinent to their clinical assignment. The clinical assignment enables students to develop and assimilate patient care skills under the direct supervision of a certified athletic trainer and/or approved clinical instructor within the athletic training room, exposure to intercollegiate athletics and/or at approved affiliated sites.

ATR 00347: Applied Biomechanics 3 s.h.
Prerequisite: HES 00346 with minimum grade of C-; Athletic Training students must earn minimum grade of C.
This course provides students with a foundation in the biomechanical concepts and applications that describe and govern human movement. Topics of the course will include, but are not limited to: friction, linear and angular motion, tissue mechanical properties, conservation of energy, work and power, fluid mechanics, stability and center of gravity, walking and running gait analysis. Topics are analyzed quantitatively through the use of modern biomechanical analyses including motion capture, electromyography, and force plates.

ATR 00358: Residency in Athletic Training I 3 s.h.
Prerequisite(s): (ATR 00220 or PHED 35220) and acceptance in the Professional Phase of the Athletic Training Education program
Corequisite(s): ATR 00338
This clinical education course, designed for first semester juniors, will review and evaluate, within a clinical assignment, those clinical proficiencies discussed in previous and concurrent course work using a learning-over-time model. The clinical assignment enables students to develop and assimilate patient care skills under the direct supervision of a certified athletic trainer and/or approved clinical instructor within the athletic training room, exposure to intercollegiate athletics and/or at approved affiliated sites. During this course, the student will be formally evaluated by an Approved Clinical Instructor only. This course must be takend and successfully completed in conjunction with ATR 00338 Clinical Techniques in Athletic Training I before a student may continue to matriculate through the Athletic Training Education Program.

ATR 00359: Residency in Athletic Training II 3 s.h.
Prerequisite(s): (ATR 00338 or PHED 35338) and (ATR 00358 or PHED 35358) Corequisite(s): ATR 00339
This clinical education course, designed for second semester juniors, will review and evaluate, within a clinical setting, those clinical proficiencies discussed in previous and concurrent course work using a learning-over-time model. The clinical assignment enables students to develop and assimilate patient care skills under the direct supervision of a certified athletic trainer and/or approved clinical instructor within the athletic training room, exposure to intercollegiate athletics and/or at approved affiliated sites. During this course, the student will be formally evaluated by an Approved Clinical Instructor only. This course must be taken and successfully completed in conjuction with ATR 00339 Clinical Techniques in Athletic Training II before a student may continue matriculating through the Athletic Training Education Program.

ATR 00360: Residency in Athletic Training III 3 s.h.
Prerequisite(s): (ATR 00339 or PHED 35339) and (ATR 00359 or PHED 35359) Corequisite(s): ATR 00340
This clinical education course, designed for first semester seniors, will review and evaluate, within a clinical setting, those clinical proficiencies discussed in previous and concurrent course work using a learning-over-time model. The clinical assignment enables students to develop and assimilate patient care skills under the direct supervision of a certified athletic trainer and/or approved clinical instructor within the athletic training room, exposure to intercollegiate athletics and/or at approved affiliated sites. During this course, the student will be formally evaluated by an Approved Clinical Instructor only. This course must be taken and successfully completed in conjuction with ATR 00340 Clinical Techniques in Athletic Training III before a student may continue matriculating through the Athletic Training Education Program.

ATR 00361: Residency in Athletic Training IV 3 s.h.
Prerequisite(s): (ATR 00340 or PHED 35340) and (ATR 00360 or PHED 35360) Corequisite(s): ATR 00341
This clinical education course, designed for second semester seniors, will review and evaluate, within a clinical setting, those clinical proficiencies discussed in previous and concurrent course work using a learning-over-time model. The clinical assignment enables students to develop and assimilate patient care skills under the direct supervision of a certified athletic trainer and/or approved clinical instructor within the athletic training room, exposure to intercollegiate athletics and/or at approved affiliated sites. During this course, the student will be formally evaluated by an Approved Clinical Instructor only. This course must be taken and successfully completed in conjuction with ATR 00341 Clinical Techniques in Athletic Training III before a student may continue matriculating through the Athletic Training Education Program.

ATR 00405: Organization & Administration in Athletic Training 3 s.h.
Prerequisite(s): (ATR 00339 or PHED 35339)
This lecture/laboratory course is designed to meet the entry level competencies for the athletic training student in the area of organization and administration of athletic training. It covers liability, budgeting, athletic training facility design, insurance, administration of medical record keeping systems, data tabulation and interpretation, emergency transportation systems, athletic training facility management, impact of state and national governing body regulations, athletic injury insurance administration and communication, conflict resolution and mediation.
The senior level course is designed to meet educational competencies in pharmacology and general medicine for the undergraduate athletic training student. This course will focus on issues in pharmacology and general medicine pertinent to the allied health profession of athletic training. Issues such as the drug approval process, side effects of medications, general medical evaluation will be explored during this course,. There is a general medical clinical field experience with the athletic raining programs medical director associated with this course.

ATR 00447: Therapeutic Modalities in Athletic Training - Laboratory Experiences 2 s.h.
Prerequisite(s): (ATR 00220 or PHED 35220) Corequisite(s): ATR 00475
This laboratory course is designed to teach teh psychomotor and clinical proficiency skills necessary to develop psychomotor skills relevant to the use of Therapeutic Modalities. This laboratory course must be taken and successfully completed in conjuction with Therapeutic Modalities in Athletic Training before a student may continue matriculating through the Athletic Training Education Program.

ATR 00475: Therapeutic Modalities for Athletic Training 3 s.h.
Prerequisite(s): (ATR 00220 or PHED 35220) and (ATR 00329 or PHED 35239)Corequisite(s): ATR 00447
This course focuses on the cognitive, affective and psychomotor competencies involved in developing appropriate therapeutic modality programs for the injured person. This course uses current research to discuss the theory and clinical applications of all potential modalities used in the athletic training room. This course implements a problem-solving approach for the return of functional integrity to the injured person through the use of therapeutic modalities. A laboratory experience is part of this class.

ATR 00476: Therapeutic Exercises in Athletic Training - Laboratory Experiences 2 s.h.
Prerequisite(s): (ATR 00475 or PHED 35475) Corequisite(s): ATR 00478
This laboratory course is designed to teach the psychomotor and lcinical proficiency skills necessary to develop psychomotor skills relevant to the use of Therapeutic Excercies. This laboratory course must be taken and successfully copleted in conjunction with Terapeutic Excercies in Athletic Training before a student may continue matriculating through the athletic Training Education Program.

ATR 00477: Psychosocial Aspects of Physical Activity 3 s.h.
Prerequsite(s): PSY 01107 and (HES 00370 or PSY 05320)
Psychosocial Aspects of Physical Activity (ATR00477) course is designed for students in the Psychology of Sport and Exercise Minor and Certificate of Undergraduate Study (CUGS) Program. The course draws upon theories, empirical studies, and practical applications to help people discover the importance and significance of psychosocial aspects in physical activity. This course will provide a theoretical foundation for exploring the relationship/interaction between biology (brain, body systems), psychology (cognitions, emotions, and behaviors), and social factors (relationships, culture, health policy) within the reviewed topic areas. Topics covered in this course include but are not limited to: the biopsychosocial model, theories and techniques of interpersonal and cross-cultural communication, eating disorders and disordered eating, substance abuse/addiction, sleep, stress, psychosocial distress, trauma (including Trauma Informed Care), mental health concepts, suicide and self-harm, sociocultural issues, abuse and/or neglect, social support systems, response to injury and rehabilitation, psychosocial aspects of pain, psychosocial and "complementary therapies" such as meditation, yoga, massage, and acupuncture This course will also demand critical thinking of the research, assigned readings, and articles that support or contradict a certain theoretical perspective/viewpoint.

ATR 00478: Therapeutic Exercises in Athletic Training 3 s.h.
Prerequsite(s): (ATR 00475 or PHED 35475) and (ATR 00447 or PHED 35447) Corequisite(s): ATR 00476
This course covers the cognitive, affective and psychomotor competencies involved in developing appropriate rehabilitation exercise protocols for the injured person. This course uses current research to discuss the physiological and biomechanical concepts involved in the clinical practice of rehabilitation. This course implements a holistic and problem-solving approach for the return of functional integrity to the injured person. A laboratory experience is part of this class.

ATR 00479: Pharmacology and General Medicine in Athletic Training 3 s.h.
Prerequisite(s): (ATR 00478 or PHED 35478)
This senior level course is designed to meet educational competencies in pharmacology and general medication for the undergraduate athletic training student. The course will focus on issues in pharmacology and general medicine pertinent to the allied health profession of athletic training. Issues such as the drug approval process, side effects of medications, general medical evaluation will be explored during this course. There is a general medical clinical field experience with the athletic training program's medical director associated with this course.

ATR 00505: Principles in Evidence-based Practice 3 s.h.
Prerequisite: Acceptance into the Athletic Training Program
This course addresses the role of research in professional Athletic Training practice including conduct of research, research sources utilization and dissemination, methodology, data analysis and principles and models of evidence-based practice.

ATR 00510: Cadaver Anatomy 4 s.h.
Prerequisite: Acceptance into the Athletic Training Program
This course offers students the opportunity to identify various structures on cadaver specimens that are related to neuro and musculoskeletal structures and pathologies of the human body.

ATR 00511: Management of Medical Emergencies 3 s.h.
Prerequisite: Acceptance into the Athletic Training Program
This is a lecture and laboratory course that provides a comprehensive approach to the identification of risk factors, preparation of emergency action plans, and recognition and care of emergency medical conditions including those that may lead to sudden death. Students will gain CPR Certification upon successful completion of curricular requirements.

ATR 00519: Clinical Assessment I 4 s.h.
Prerequisite(s): In good standing with the Athletic Training Program
This course discusses prevention, assessment, diagnosis, and treatment approaches for patients with musculoskeletai pathologies as it relates to the lower extremity and lumbar spine.

ATR 00520: Clinical Assessment II 4 s.h.
Prerequisite: ATR 00519
This course discusses prevention, assessment, diagnosis, and treatment approaches for patients with musculoskeletal pathologies as it relates to the head, upper extremity, cervical and thoracic spine.

ATR 00521: Clinical Assessment III 4 s.h.
Prerequisite: ATR 00520
This course discusses knowledge, skills and abilities associated with the prevention, assessment, diagnosis, and treatment approaches for patients with a variety of medical conditions. Students will practice the clinical skills necessary to provide appropriate patient care within this course.

ATR 00524: Injury Risk Management to Enhance Human Performance 3 s.h.
Prerequisite(s): In good standing with the Athletic Training Program
This course will provide students with the knowledge, skills and abilities that relate to health care systems, injury prevention, prophylactic strapping & bracing, and durable medical equipment. This course will also teach students how to develop assessment plans that detect poor movement strategies and then implement corrective intervention programs to improve movement patterns that will reduce injury risk and maximize performance.

ATR 00526: Healthcare Management & Quality Improvement 3 s.h.
Prerequisite: ATR 00531
This course will provide students with the concepts and issues related to healthcare management and quality improvement within the clinical setting to enhance patient care. Students will learn the knowledge, skills and abilities in the areas of, but not limited to, healthcare informatics, quality improvement, finance and reimbursement, managed care, professional and governmental regulations, diversity within the workplace, and professional responsibility. These topics will culminate into developing healthcare management strategies using qualitative and quantitative outcomes measures, developing healthcare leadership & communication skills, self-assessment and facility management to advocate best clinical practice for all stakeholders involved in patient care.

ATR 00530: Pharmacology 3 s.h.
Prerequisite: ATR 00533
This course will teach students the knowledge, skills and abilities needed to understand basic principles of pharmacology, pharmacodynamics and pharmacokinetics. Students will also learn the indications, contraindications, dosing, interactions and adverse reactions of pharmacological agents in order to educate patients about medication administration while managing their condition. This course is also designed to educate students how to administer medications using the appropriate route upon the order of a prescribing physician and in accordance with governing pharmacological regulations.

ATR 00531: Therapeutic Interventions I 4 s.h.
Prerequisite: ATR 00519 and ATR 00524
This course will use an evidence-based approach to teach students the knowledge, skills and abilities to use physical agents as a component in the development and implementation of plans of care designed to address a patient's impairments, limitations and restrictions following injuries requiring both surgical and non-surgical therapeutic interventions. These physical agents include but may not be limited to cryotherapy, thermotherapy, ultrasound therapy, electrical therapy, diathermy, intermittent compression, traction, LASER, massage and manual therapies. Additionally, students will be taught how to use patient-oriented and clinician-oriented outcomes to develop and adjust their plans of care to provide the most effective healthcare.

ATR 00533: Therapeutic Interventions II 4 s.h.
Prerequisite: ATR 00531
This course will use an evidence-based approach to teach students the knowledge, skills and abilities to use rehabilitation & reconditioning components in the development and implementation of plans of care designed to address a patient's impairments, limitations and restrictions following injury. These concepts include but may not be limited to strength, endurance power, restoration of flexibility and range of motion, activity specific conditioning, proprioception and balance, and agility. Additionally, students will continue to use patient-oriented and clinician-oriented outcomes to develop and adjust their plans of care to provide the most effective healthcare.

ATR 00535: Behavioral Health 3 s.h.
Prerequisite: ATR 00526
This course teaches the knowledge, skills and abilities needed for the Athletic Trainer to appropriately develop and implement policies to identify patients with a behavioral health crisis (e.g., sociocultural, mental, emotional and/or physical) and for referral to qualified providers. This course will also address the role of cultural competence among athletic trainers, their patients, and other healthcare providers involved in developing policy, referral and plans of care that promote high quality healthcare.

ATR 00537: Residency in Athletic Training I 3 s.h.
Prerequisite: ATR 00519
This supervised clinical experience course provides students with clinical practice opportunities. This course emphasizes continuum of care, including the use of evidence-based practice, cultural competence, inter-professional practice, communication, quality improvement, ethical decision- making, documentation, patient-centered care and professionalism.

ATR 00538: Residency in Athletic Training II 3 s.h.
Prerequisite: ATR 00520
This clinical experience course continues to provide students with clinical practice opportunities using increased supervised clinical decision-making autonomy. This course also continues to emphasize continuum of care, including the use of evidence-based practice, cultural competence, inter-professional practice, communication, quality improvement, ethical decision- making, documentation, patient-centered care and professionalism.

ATR 00540: Fellowship in Athletic Training I 5 s.h.
Prerequisite: ATR 00539
This clinical course will allow students to have an immersive experience in which to practice clinical skills under supervised clinical decision- making autonomy. This course emphasizes continuum of care, including the use of evidence-based practice, cultural competence, inter-professional practice, communication, quality improvement, ethical decision- making, documentation, patient-centered care and professionalism.

ATR 00541: Fellowship in Athletic Training II 5 s.h.
Prerequisite: ATR 00540
This course is the culmination of all clinical experiences. Students practice clinical skills during a full semester of supervised immersive clinical education experiences with the greatest amount of supervised autonomy. This course emphasizes continuum of care, including the use of evidence-based practice, cultural competence, inter-professional practice, communication, quality improvement, ethical decision- making, documentation, patient- centered care and professionalism.

ATR 00560: Capstone in Clinical Reasoning I 4 s.h.
Prerequisite: ATR 00535
This course will provide the student, under the guidance of their advisor, the opportunity to develop a clinical/research question and methodology, data analysis and interpretation that leads to a research project that will enhance the Athletic Training profession. In addition, this course will be used to assess the student's competence to practice Athletic Training. Course will include a Master's Comprehensive Exam to assess Athletic Training skills.

ATR 00561: Capstone in Clinical Reasoning II 4 s.h.
Prerequisite: ATR 00560
This course is a continuation of ATR00560 Capstone in Clinical Reasoning I. The student will prepare their research project for a culminating presentation in preparation for submission to a scholarly journal.

ATR 00570: Seminar in Healthcare Inter-professional Education & Practice 2 s.h.
Prerequisite(s): ATR 00540 or NUT 00530 or NURS 03303
This seminar course will provide students from various health care disciplines to work together to develop skills needed to engage in inter-professional collaborative practice. Students will complete pre-work online and then attend virtual meetings with other healthcare disciplines to develop care plans for patient cases. Specific, but not limited to, areas of study include ethics for inter-professional practice, roles and responsibilities of health care providers, inter-professional communication strategies and developing quality health care teams to enhance patient outcomes.

HES 00100: Teaching Concepts of Driver Education 3 s.h.
Prerequisite(s): (ATR 00235 or PHED 35235) and (HPE 00325 or HLTH 37325) or (ATR 00235 or PHED 35235) and (HPE 00326 or HLTH 37326)
The course is designed for individuals seeking New Jersey Driver Education teacher endorsement. The content includes learning to teach motor vehicle operation, driving environment and the student development of teaching techniques emphasizing safety, risk perception, and decision-making prcesses applied in a vehicle. Learning how to instruct others in performing behind-the-wheel driving will be scheduled outside of class time.

HES 00116: Safety First Aid Basic Understanding of Athletic Injuries 3 s.h.
Prerequisite(s): Acceptance into one of the following programs; Athletic Training, Health Promotion and Fitness Management, or Health and Physical Education Teacher Certification.
This course is designed for the individual who is interested in gaining CPR and First Aid certification and a basic understanding of athletic injuries. The first part of this class will allow students to understand and demonstrate appropriate techniques in performing American Red Cross Community CPR and First Aid techniques required for certification. The second component of the class will enable students to understand basic concepts in athletic injury: anatomy, recognition, and basic care.

HES 00345: Exercise Physiology (with lab) 4 s.h.
Prerequisite(s): (HES 00241 and HES 00242) or (BIOL 10210 and BIOL 10212), all with a grade of C- or higher.
A course in applied anatomy and physiology, this course studies the interrelationship of exercise and physiology. This course also covers the functions of the human body under the stress of physical activity.

HES 00401: Exercise Prescription 3 s.h.
Prerequisite(s): HES 00345 OR HES 00349 with a minimum grade of C-
This course provides students with the knowledge and practical experience in exercise testing and prescription. It enables students to establish scientific foundations of exercise testing and prescription, identify risk factors for disease and prescribe exercise programs based on exercise test results and personal limitations. Practical experiences are provided for testing subjects in the laboratory. The course prepares students for professional exercise certifications.

HES 00510: Advanced Technology in School Health Education and Physical Education 3 s.h.
This course is designed to provide students with knowledge, skills, and tools to effectively implement technology in Health and Physical Education. This course will include computer functionality, technology equipment, software, and apps applicable to Health and Physical Education.

HES 00515: Driver Education Concepts and Theory 3 s.h.
The course is designed for currently certified teachers seeking New Jersey Driver Education teacher endorsement. The content includes learning to teach motor vehicle operation, driving environment and the student development of teaching techniques emphasizing safety, risk perception, and decision-making processes applied in a vehicle. Learning how to instruct others in performing behind-the-wheel driving will be scheduled outside of class time.

HES 00520: Exercise and Epidemiology 3 s.h.
This course examines the etiology and pathophysiology of certain diseases and specifically includes the role of exercise as a preventative measure in the onset of these diseases. Disease processes investigated are coronary artery and coronary heart disease, hypertension, Type 2 diabetes mellitus, obesity, osteoporosis, selected cancers and low back pain syndrome.

HES 00521: Contemporary Issues in School Health Education and Physical Education 3 s.h.
This course is designed to provide an opportunity for observation, description and direct discussion of new trends, issues and polices that affect School Health Education and Physical Education, including international and national standards and curricular frameworks, current trends in delivery of programs and pedagogy, and international, national and state/local policies or mandates that affect the status and delivery of School Health Education and physical education in public schools.

HES 00525: Curriculum Strategies In Substance Awareness Education 3 s.h.
Prerequisite: PSY 05502
This course provides students with the knowledge, resources and skills needed to plan and organize curricula in chemical health education which meet the needs of students in school and non-school based settings. Students evaluate the nature and scope of the substance abuse problem in order to make informed decisions in the development, organization, implementation and evaluation of substance abuse programs. Special attention is given to program and policy development, instructional strategies, program evaluation, staff development, and the dynamics of school culture.

HES 00530: Advanced Instructional Strategies in School Health Education 3 s.h.
The course examines the many creative and innovative strategies used by school health teachers. Instructional planning will be the key focus. The class will look at the importance of national and state standards, teaching philosophy, health literacy, and strategies for and assessment of instruction.

HES 00540: Advanced Instructional Strategies in Physical Education 3 s.h.
This course examines the key factors and skills that contribute to teaching physical education effectively across all grade levels and ability groups. Specific topics include Understanding by Design concepts, Teaching and Learning styles, Curriculum/Unit/Lesson Design, Teaching Modifications for Challenging Environments, and Disposition Impact on Teacher Effectiveness.

HES 00541: Advanced Assessment in School Health Education 3 s.h.
This course focuses on theories of Assessment, Measurement and Evaluation as it is applied to School Health Education. Specific details will focus on how to develop and implement course related assessments along with how to evaluate student achievement in a variety of ways. Additional emphasis will address program assessment along with teacher assessment as it is related to teaching Health Education in the P–12 school setting.

HES 00555: Individual Study in Health and Physical Education 3 to 6 s.h.
This course is designed to give the student the opportunity to pursue an in-depth inquiry into a selected topic in health and physical education on an individualized basis. It provides flexibility for the student in increasing specialization in a selected area of interest. Offered in summer session only for matriculated students with a minimum of 25 S.H. completed. Students must submit a written proposal for individual study to the program advisor by March 15 prior to the summer session desired.

HES 00560: Advanced Assessment in Physical Education 3 s.h.
This course provides advanced instruction in principles, concepts and forms of assessment in physical education. It is designed to provide a basic understanding of statistics to Health and Physical Education graduate students. Assessment alignment with teacher evaluation models and student learning outcomes will be discussed. Project based learning will be incorporated that includes how to plan and implement a unit assessment and analyze and interpret the data.

HES 00570: Teaching School Health Education and Physical Education to Students with Disabilities 3 s.h.
In this course, students acquire the knowledge and instructional strategies needed to plan and implement an effective and inclusive Health and Physical Education program for students with disabilities ages 3–21. The course will include assessments, school and community collaborations, instructional strategies for self-contained and inclusion classes, and resources for activity modifications and information on disabilities.

HLT 00103: Health and Wellness 3 s.h.
This course stresses the concepts of lifetime health and physical fitness. It examines the positive effects of exercise upon the heart and blood vessels, obesity and proper diet, body mechanics, and how the body handles stress. The course also examines the negative effects of disease, including socially transmitted diseases, substance abuse including narcotics, alcohol and tobacco, and other contemporary health-related problems. Students learn to analyze their strengths and limitations while planning a personal wellness profile which best fits their needs and interest.

HLT 00170: Stress Management 3 s.h.
This course focuses on the nature of stress and the impact it has on a person's health. The student will study the relationship of the physiological, psychological and social factors which contribute to one's general stress balance and develop life skills to combat the negative impact of stress.

HLT 00200: Introduction to Public Health and Wellness 3 s.h.
Community and Public Health examines the trends and components of the community health field. This course prepares students for the additional courses in the Community Health Advocacy and Education program. Topics include foundations of community health, epidemiology, health of the nation, community mental health, environmental health and occupational safety.

HLT 00227: Consumer Health Decisions 3 s.h.
This course examines the rights and responsibilities of a consumer faced with increasing amounts of information related to his or her overall well-being. It examines the major problem of health fraud and the components of scientific research. The role of advertising is explored, as well as sound principles for purchasing nutrition, fitness and other health-related products and services. Students learn important concepts related to health insurance and hospitals, traditional and alternative medical care and how to better manage the decisions they make.

HLT 00262: Drugs, Alcohol, and Tobacco 3 s.h.
This course is designed to examine in depth the use and abuse of drugs, alcohol and tobacco including the origins and current status of use. Topics include types of drugs, physiological and psychological impact, assessment, monitoring and prevention programs. Federal and state laws are considered and drug policy is examined. Furthermore, the societal impact of drug use and abuse is examined. The content considers the topic from a health professional's position and is specific to the profession of wellness education.

HLT 00301: Health and Diverse Populations 3 s.h.
The goal of this course is to enable students to understand the powerful influence of social, economic, geographic and demographic factors on the health-related attitudes, beliefs and actions of individuals and communities. Students explore the concepts of health literacy, health disparities, and the impact of public policy on the health status of different populations from a social justice perspective. Social Capital is explored as a model for effectively improving the health status of diverse populations.

HLT 00303: Environmental Issues and Health 3 s.h.
This course exposes students to environmental health risks impact on human health. Students will examine the relationship of lifestyle and the ability of the planet to sustain us. Students are introduced to conceptual definitions for environmental health and hazards that impact human health. The importance of establishing and enforcing standards (local, federal, occupational) which protect employees, communities, and the environment will be considered. Students will explore areas in infectious disease, toxicology, environmental risk assessment, occupational safety, waste management, pollution, and sustainability. Students will understand the importance of effective risk communication strategies/approaches and advocacy for policies and laws that protect the future well being of our planet.

HLT 00344: US Health Care Systems 3 s.h.
This course provides an overview of public health's role in healthcare history, delivery, financing and policy in the United States. Governmental agencies roles and policies and healthcare statistics are considered as the shape public health.

HLT 00500: COMM BASED RESRCH METH/ANLYS 3 s.h.
Must be matriculated into the M.S. in Health Equity program or have special permission by the instructor.
Course Description: Community-based participatory health research is a collaborative approach to research and data analyses with the goal to recognize and protect health by creating partnerships within the community. The interactive class aims to examine the principles, approaches and strategies of community-based health research. The community based research methods are needed to enhance equitable interventions and policy formation that promotes health equity.

HLT 00501: Seminar in Promoting Health Justice 2 s.h.
This course provides students with a critical analysis of health justice and causal factors that perpetuate health inequities. Students will learn about legal, structural, and justice issues underlying health disparities. They will examine current safety net programs and legal protections affecting the health of vulnerable populations. Finally, they will apply concrete strategies for change and health justice promotion through case study analyses.

HLT 00502: Practicum in Health Equity 1 s.h.
In this hands-on, experiential seminar course, students will be connected with a community or public health site in which they are able to apply what they are learning in class and participate in the process of building health equity within a community. Students will spend 70 hours (approximately 5 hours each week) over the semester observing and participating in the ongoing activities of the site to facilitate a hands-on learning experience. Students will also participate in live, online class meetings with their classmates and instructor to discuss their onsite observations and experiences through the lens of Community-Based Research Methods.

HLT 00503: Statistics for Community-Based Research in Health 3 s.h.
This course provides students with the content knowledge and application of statistics for community-based research (CBR) in health. It addresses types of variables and data, descriptive summary and analysis, statistical inference and probability, and the appropriate use of parametric and non-parametric statistical procedures to analyze and interpret different types of quantitative data collected in community-based research. The SPSS statistical analysis platform is used to illustrate and apply fundamental principles and concepts of statistical analysis.

HLT 00504: Methods and Applications of Data Analytics in Community Health 3 s.h.
In this course, students will learn the language and process of data analytic methods in search of trends to answer questions relevant to population health. Specifically, students will learn the sources of data, how this data is aggregated and analyzed and how to use the data to guide evidence-based practice and policy formation. Ethical issues surrounding data management and application will also be addressed.

HLT 00505: Historical and Social Perspectives in Health Disparities 3 s.h.
This course focuses on the historical perspectives of health disparities. Students will focus attention on the investigation on the fundamental and root causes of inequity in the United States. Students will examine the empirical evidence to evaluate how historic policies and interventions in the United States have impacted groups differently. Societal and social factors that influence and impact health disparities will be evaluated.

HLT 00507: Thesis in Health Equity 3 s.h.
Prerequisite(s): HLT 00500 and HLT 00503 and must be matriculated into the M.S. in Health Equity
This course will provide the student with the opportunity to produce quality driven community research in health equity under the direction of their Master's Thesis faculty advisor. A research topic will be chosen through the collaboration of the student and the student's faculty advisor. The student will be expected to develop a research proposal, including a research question, literature review and methodology. The student will submit an IRB proposal before collecting and analyzing the data. The student will then complete the writing of all sections of their thesis including an interpretation of the results and discussion. The culmination of the process will require the student to present the final thesis. This class may be taken up to four times.

HLT 00550: Capstone Project 3 to 6 s.h.
Prerequisite: This course must be taken in the last semester of the program.
In this independent study course, students will work individually with a faculty advisor to complete a major project relevant to health promotion. Projects may include the development of curriculum, program development, program evaluation, a research thesis, or other project with the approval of the Wellness and Lifestyle Management faculty coordinator.

HLTH 37512: Understanding And Applying The Professional Literature In Hes 3 s.h.
This course provides an overview of the research methods used in the health and exercise science field with an emphasis on reading, interpreting and applying the research findings in practical settings. The course will include an overview of both quantitative and qualitative research methods, as well as the steps of the research process. Students will learn how to perform a literature review, conduct a program evaluation and other practical applications of the research process.

HLTH 37515: Driver Education Concepts And Theory 3 s.h.
The course is designed for currently certified teachers seeking New Jersey Driver Education teacher endorsement. The content includes learning to teach motor vehicle operation, driving environment and the student development of teaching techniques emphasizing safety, risk perception, and decision-making processes applied in a vehicle. Learning how to instruct others in performing behind-the-wheel driving will be scheduled outside of class time.

HLTH 37518: Nutrition And Epidemiology 3 s.h.
This course is designed to explore nutrition¿s role in the prevention and rehabilitation of a variety of diseases including: hypertension, hypercholestolemia, cardiovascular disease, diabetes, obesity, arthritis, osteoporosis, and cancer. The course will explore the etiology and progression of these diseases and facilitate an understanding of how nutrition may be prescribed for the care of individuals with these diseases. A portion of the course will be devoted to analyzing case studies and guiding the student through the process of nutritional management. Students will be required to perform a review of literature on a specific disease, which they will then present to the class.

HLTH 37520: Exercise And Epidemiology 3 s.h.
This course examines the etiology and pathophysiology of certain diseases and specifically includes the role of exercise as a preventative measure in the onset of these diseases. Disease processes investigated are coronary artery and coronary heart disease, hypertension, Type 2 diabetes mellitus, obesity, osteoporosis, selected cancers and low back pain syndrome.

HLTH 37525: Curriculum Strategies In Substance Awareness Education 3 s.h.
This course provides students with the knowledge, resources and skills needed to plan and organize curricula in chemical health education which meet the needs of students in school and non-school based settings. Students evaluate the nature and scope of the substance abuse problem in order to make informed decisions in the development, organization, implementation and evaluation of substance abuse programs. Special attention is given to program and policy development, instructional strategies, program evaluation, staff development, and the dynamics of school culture.

HLTH 37530: Leadership And Management In Health Promotion Programs 3 s.h.

HLTH 37541: Wellness Coaching And Behavior Change 3 s.h.
This course will provide practitioners with the theoretical background and tools needed to effect positive lifestyle changes in individual clients and population groups. Students will learn to use a wellness coaching delivery model that is based on empirically-supported health behavior theories, such as Social Cognitive Theory and the Transtheoretical Model, to support and motivate lasting behavior change.

HLTH 37542: Program Planning In Health Promotion 3 s.h.
This course provides an overview of leading health program planning theories, including PRECEDE/PROCEED and Intervention Mapping, and the application of these theories in the most common health promotion settings. The program planning process will be discussed in detail and case studies will be used to demonstrate the successful application of this process.

HLTH 37550: Capstone Project 3 s.h.
Prerequisite: This course must be taken in the lastsemester of the program.
In this independent study course, students will work individually with a faculty advisor to complete a major project relevant to health promotion. Projects may include the development of curriculum, program development, program evaluation, a research thesis, or other project with the approval of the Wellness and Lifestyle Management faculty coordinator.

HLTH 37580: Obesity And Diabetes Prevention And Management 3 s.h.
Prerequisites: INAR 06200 and (BIOL 10211 orBIOL 10212)
The purpose of this course is to examine the most common diseases afflicting Americans which have exercise as one of its primary modes for prevention and rehabilitation. The course will thoroughly review the underlying causes for each disease and provide the student with a complete understanding of how exercise can be used in combating these diseases. The primary areas of focus will be cardiovascular, pulmonary and metabolic disorders.

HLTH 37590: Integrating Wellness Into School Settings 3 s.h.
This course addresses teh growing demand for wellness initiatives for students, their families and staff in P through 12 school settings. Teachers, school nurses, school administrators and community helath promotion professionals will understand how to build wellness programming into the school community.

HLTH 37600: Wellness Through The Lifecycle 3 s.h.
This course is an overview of critical health and wellness issues specific to the lifecycle stages from birth to old age. Designed for health promotion practitioners, this course will provide a review of intervention guidelines, resources and program examples of wellness programs to meet the needs of clients and populations in each stage of life.

HLTH 37610: Positive Perceptions, Performance and Wellness 3 s.h.
This course is designed to provide students with knowledge of core concepts from positive psychology and the strengths movement from the perspective of wellness philosophy. Students will explore ways in which positive perceptions can be used to help target populations achieve personal and work life satisfaction. Students will develop competency in applied interventions in workplace, school, clinical and community settings to enhance wellness, productivity and performance. This course addresses work and life satisfaction, important drivers of health, by incorporating the fields of positive psychology and wellness.

HPW 00340: Program Planning & Leadership in Health Promotion & Wellness 3 s.h.
Prerequisite(s): (HPW 00350 or HLTH 37350)
This course identifies and explains the components of a successful health promotion and fitness program. Students learn how to conduct a needs assessment, set goals and objectives, design intervention strategies, promote the program, find resources, prepare a budget and evaluate a program. In addition, students sharpen their professional skills related to public speaking, time management and business writing.

HPW 00350: Health Behavior Theory and Counseling 3 s.h.
Prerequisite(s): HPW 00210 or HLT 00200 or NUT 00230 or HES 00105
This course examines the factors that influence an individual's choices and behaviors related to health and the process of motivating change within the individual to adopt healthful behaviors and discontinue unhealthful ones. Several theories of health behavior are examined and applied. The different roles of the client and educator are addressed as the student is prepared to counsel others in making positive health behavior changes.

HPW 00360: Facility & Program Management in Wellness 3 s.h.
Prerequisite: HPW 00210
This course examines the skills necessary to effectively manage a health promotion facility and program through the study of the health and fitness facility management industry. Topics include training and managing staff, marketing programs and services, customer service, financial management, legal concerns, equipment selection and health and safety issues.

NUT 00200: Basic Nutrition 3 s.h.
Students study human nutrition through the basic knowledge of nutrients and the physiological processes involved in the utilization of food. They also develop an understanding of the ways in which age, health, social, and economic factors and other variables affect nutritional needs and food practices. A computerized dietary analysis may be one of the course requirements.

NUT 00415: Nutrition for Fitness 3 s.h.
Prerequisite(s): Undergraduate level NUT 00200 Minimum Grade of C and BIOL 10210 minimum grade of C- and BIOL 10212 minimum grade of a C-
This advanced nutrition course explores the relationship between nutrition, physical fitness, performance and disease prevention. Specific topics include nutrition fraud, supplementation, ergogenic aids, diet planning for athletes and the relationship between nutrition and chronic diseases such as cancer and heart disease. In addition, students continue to develop their skills as nutrition counselors and educators.

NUT 00500: Advanced Nutritional Assessment 3 s.h.
Prerequisite: Must be accepted into the M.S. in Nutrtitionand Dietetics program and in the fifth (graduate) year ofthe program.
This graduate level course will expand upon the nutritional assessment skills of dietetics students to enable them to perform a complete client assessment. Students will learn to assess lifestyle habits, health risks, dietary intake, biometric measurements, and results of blood, stool, saliva and urine laboratory tests. Students will integrate assessment data into a comprehensive analysis and recommendation report for a client. Client confidentiality, data management and follow-up nutrition counseling skills will also be addressed.

NUT 00501: Nutrition Research Seminar 1 s.h.
Admission to the MS in Nutrition and Dietetics
The course, NUT 00501 provides students the opportunity to participate in nutrition related research and practice the skills in a variety of research settings. Essential components of research methods including qualitative and quantitative interventions, screening and cleaning data, and IRB applications will be presented in the seminar. Students will perform hands on techniques to complement topics covered in HES 00301 Research Methods. The role of nutrition research in evidenced based practice will be emphasized through projects and activities throughout the seminar.

NUT 00510: Advanced Topics in Public Health Nutrition 3 s.h.
Prerequisite: Earn a grade of C or higher in NUT 00410
This course is an exploration of the relationship between nutrition, wellness and disease prevention. Students will examine the interaction between the physical and social environment, lifestyle habits and biological factors in determining the health status of a population and the role nutrition plays in addressing them. The development, implementation, monitoring and evaluation of nutrition programs and research needed to address current public health issues will be explored.

NUT 00511: Advanced Nutrition Therapy 3 s.h.
This course provides an in-depth discussion of advanced medical nutrition therapy topics including pediatric nutrition, sports nutrition, and eating disorders. Students enrolled in this course will integrate the advanced medical nutrition therapy to achieve proficient knowledge and skills in the field. Critical thinking and problem solving will be required to complete projects and activities in pediatrics, sports and eating disorders as it pertains to medical nutrition therapy.

NUT 00518: Nutrition and Epidemiology 3 s.h.
This course is designed to explore nutrition's role in the prevention and rehabilitation of a variety of diseases including: hypertension, hypercholesterolemia, cardiovascular disease, diabetes, obesity, arthritis, osteoporosis, and cancer. The course will explore the etiology and progression of these diseases and facilitate an understanding of how nutrition may be prescribed for the care of individuals with these diseases. A portion of the course will be devoted to analyzing case studies and guiding the student through the process of nutritional management. Students will be required to perform a review of literature on a specific disease, which they will then present to the class.

NUT 00520: Supervised Practice 6 s.h.
Prerequisite: Must be accepted into the Coordinated Program i Dietetics and in the graduate year of the program
This course provides the first half of the required 1200-hour supervised practice experience in partial fulfillment of the requirements for the Registered Dietitian credential. Students will be assigned to an ACEND-approved site and will complete 600 hours of clinical service in a hospital, community and/or school setting, and a food service facility. (Note: upon completion of the 1200-hour experience, the student must successfully complete a 600 hour rotation in a hospital setting and in a community/school setting.)

NUT 00530: Medical Nutrition Therapy Supervised Practice 6 s.h.
Prerequisite: Must be accepted into the Coordinated Program in Dietetics and in the graduate year of the program
This course provides the second half of the required 1200-hour supervised practice experience in partial fulfillment of the requirements for the Registered Dietitian credential. Students will be assigned to an ACEND-approved site and will complete 600 house of clinical service in a hospital, community and/or school setting, and a food service facility.) Note: upon completion of the 1200-hour experience, the student must successfully complete a 600-hour rotation in a hospital setting and a community/school setting.)

NUT 00540: Metabolic Basis of Disease 3 s.h.
Metabolic Basis of Disease is a course that provides an in-depth review of the biochemical and physiological bases of macronutrient and micronutrient metabolism and their regulation in humans, as well as body weight regulation and it's metabolic underpinnings. The primary focus of the course will be aimed at tissue-specific metabolism involving carbohydrates, lipids, proteins, and micronutrients and how inborn errors of metabolism result in diseases that have nutritional implications with regard to their cause and treatment. After completing this course, students will; i) understand the biochemical and physiological aspects of metabolism and its regulation as it applies to different tissues in a whole-body context; ii) gain appreciation for original and scientific review papers related to macronutrient and micronutrient metabolism, body weight regulation, and metabolic regulation, and ; iii) critically apply knowledge gained from lectures and supplemental readings during problem based learning (PBL) assessments, exams, and a case study report.

PHED 35103: Health And Wellness 3 s.h.
This course stresses the concepts of lifetime health and physical fitness. It examines the positive effects of exercise upon the heart and blood vessels, obesity and proper diet, body mechanics, and how the body handles stress. The course also examines the negative effects of disease, including socially transmitted diseases, substance abuse including narcotics, alcohol and tobacco, and other contemporary health-related problems. Students learn to analyze their strengths and limitations while planning a personal wellness profile which best fits their needs and interest.

PHED 35555: Individual Study In Health And Physical Education 3 to 6 s.h.
This course is designed to give the student the opportunity to pursue an in-depth inquiry into a selected topic in health and physical education on an individualized basis. It provides flexibility for the student in increasing specialization in a selected area of interest. Offered in summer session only for matriculated students with a minimum of 25 S.H. completed. Students must submit a written proposal for individual study to the program advisor by March 15 prior to the summer session desired.

PHED 36100: Teaching Concepts Of Driver Education 3 s.h.
The course is designed for individuals seeking New Jersey Driver Education teacher endorsement. The content includes learning to teach motor vehicle operation, driving environment and the student development of teaching techniques emphasizing safety, risk perception, and decision-making prcesses applied in a vehicle. Learning how to instruct others in performing behind-the-wheel driving will be scheduled outside of class time.

WLM 00512: Understanding and Applying the Professional Literature in HES 3 s.h.
This course provides an overview of the research methods used in the health and exercise science field with an emphasis on reading, interpreting and applying the research findings in practical settings. The course will include an overview of both quantitative and qualitative research methods, as well as the steps of the research process. Students will learn how to perform a literature review, conduct a program evaluation and other practical applications of the research process.

WLM 00530: Leadership and Management in Health Promotion Programs 3 s.h.
This course covers a variety of leadership issues necessary for ascending from a clinical position to an administrative or management position in a health profession. The general principle are applicable regardless of whether the goal is to ascend into a formal large institution(e.g., hospital), smaller institutional practice, healthcare corporation, private practice, or educational institution setting; basically any healthcare setting where one may have employees to work with or manage. Students are expected to: Participate actively by sharing their own personal experiences in the healthcare setting, provide analysis or critique of various situations presented, and integrate the material learned to answer a comprehensive question at the end of the semester as if they are the leader in an appropriate organizational setting.

WLM 00541: Wellness Coaching and Behavior Change 3 s.h.
This course will provide practitioners with the theoretical background and tools needed to effect positive lifestyle changes in individual clients and population groups. Students will learn to use a wellness coaching delivery model that is based on empirically-supported health behavior theories, such as Social Cognitive Theory and the Transtheoretical Model, to support and motivate lasting behavior change.

WLM 00542: Program Planning in Health Promotion 3 s.h.
This course provides an overview of leading health program planning theories, including PRECEDE/PROCEED and Intervention Mapping, and the application of these theories in the most common health promotion settings. The program planning process will be discussed in detail and case studies will be used to demonstrate the successful application of this process.

WLM 00575: Wellness in the Workplace 3 s.h.
Wellness in the Workplace examines overall management of wellness programs and facilities, with an emphasis on human resource management. In this case, wellness professionals will enhance their knowledge and application of how these elements that can be applied to wellness management settings. Topics include organizational structure, training, and managing staff, funding worksite health promotion programs, financial management, legal and ethical concerns, strategies for program promotion and customer service relations.

WLM 00580: Obesity and Diabetes Prevention and Management 3 s.h.
Prerequisite(s): (NUT 00200 or INAR 06200) and (BIOL 10211 or BIOL 10212)
The purpose of this course is to examine the most common diseases afflicting Americans which have exercise as one of its primary modes for prevention and rehabilitation. The course will thoroughly review the underlying causes for each disease and provide the student with a complete understanding of how exercise can be used in combating these diseases. The primary areas of focus will be cardiovascular, pulmonary and metabolic disorders.

WLM 00590: Integrating Wellness Into School Settings 3 s.h.
This course addresses the growing demand for wellness initiatives for students, their families and staff in P through 12 school settings. Teachers, school nurses, school administrators and community health promotion professionals will understand how to build wellness programming into the school community.

WLM 00600: Promoting Human Wellness Across the Lifespan 3 s.h.
This course introduces and examines the dimensions of wellness as well as an ecological approach to health and wellness. Students will be exposed to personal, social, and environmental factors that influence health and wellbeing. The course provides a conceptual framework with which to understand the interrelationships between people and the encompassing world in which they live, work, and play.

WLM 00610: Positive Perceptions & Performance Wellness 3 s.h.
This course is designed to provide students with knowledge of core concepts from positive psychology and the strengths movement from the perspective of wellness philosophy. Students will explore ways in which positive perceptions can be used to help target populations achieve personal and work life satisfaction. Students will develop competency in applied interventions in workplace, school, clinical and community settings to enhance wellness, productivity and performance. This course addresses work and life satisfaction, important drivers of health, by incorporating the fields of positive psychology and wellness.

WLM 00620: Internship in Wellness and Lifestyle Management 3 s.h.
Prerequisite: Students must have completed 27 semester hours in the program.
The goal of this course is to provide graduate students in Wellness and Lifestyle Management with an opportunity to apply the professional knowledge they have gained in their coursework to a professional setting. In addition to participating in the daily operation of the site, the student will complete a major project which incorporated two or more of the professional skills s/he has learned in the coursework of the program.

WLM 00621: Practicum in Wellness Coaching 3 s.h.
Prerequisite(s): WLM 00541 and WLM 00600 and WLM 00580
Practicum in Wellness Coaching is the final course in a four-course sequence designed to prepare students to sit for the National Board Certification in Wellness Coaching through the ICHWC and National Board of Medical Examiners. This is not an online course; students must be able to come to the Rowan campus to complete it. The primary emphasis of this course is to provide students with a minimum of 20 hours of coaching experience under the supervision of a faculty advisor. Students will meet individually with the faculty advisor on three separate occasions to review specific coaching sessions and receive feedback on how they can improve their coaching skills. In addition, the course will cover topics including how to structure and manage a coaching practice and ethical/legal considerations for coaches.

HIST 05100: The West in the World to 1600 3 s.h.
This course covers the evolution of Western Culture from the Stone Age to the end of the Thirty Years War, emphasizing the medieval and early modern periods. Students study the ancient period to learn of its contribution to western culture. The course introduces students to the principles and methodology of history.

HIST 05101: The West in the World since 1600 3 s.h.
This course examines the entanglements of European peoples and nations in the region and wider world after 1600. It emphasizes cultural, social, intellectual, political and economic transformations, and interactions with other parts of the world from the 17th century to the present. This course introduces students to the principles and methodology of history.

HIST 05120: World History Since 1500 3 s.h.
This course studies the key changes in the patterns of interaction among the major cultures of the earth from the beginnings of European Expansion in the 1500's. The course covers the roots of European Expansion, the response of the Confucian, modern, and non-Eurasian cultures, and the emergence of a non-Western Third World Block since 1914.

HIST 05150: United States To 1865 3 s.h.
This course examines the historical roots of the American democratic traditions, with the emphasis on understanding the political, social and cultural forces developed in the new physical setting of North American and finally welded into a unified nation.

HIST 05151: United States Since 1865 3 s.h.
This course analyzes the principal political, social and cultural factors conditioning the life of the nation since the Civil War. It emphasizes the issues facing modern America with the impact of industrialization and the problems of world leadership.

HIST 05306: Historical Methods-WI 3 s.h.
Prerequisites: COMP 01112
This course offers intensive training in the techniques of historical research and analysis of historical writing. Required of History majors as prerequisite for other upper-level courses.

HIST 05492: Seminar 3 s.h.
Prerequisites: Senior Status and HIST 05306 w/C- or better, at least 9 credits in 300-400 level history courses.
This course concentrates on a research paper of substantial length based upon primary as well as secondary sources. The course also requires critical analysis and discussion of the papers by seminar participants. Required of History majors during their senior year.

HIST 05500: Colloquium In American History 3 s.h.
This course introduces students to in-depth historical analysis of a selected theme in American history, including work with historical sources, critical reading of historians' accounts, intensive research and writing, and class discussion. Proposed topics include American Immigration History, Colonial North America (1500-1775), The American Revolution and Early Republic (1763-1820), Comparative History of the Americas, and Modern American and European Women in Historical Perspective.

HIST 05506: Research Methods in History 3 s.h.
This course is an intensive introduction to research methods for historians, designed for graduate students who have never had extensive preparation in historical methods or whose skills need refreshing and updating. The course focuses on working with historical sources, an introduction to historiography including critical reading of historians' accounts, an immersion in research and writing skills for advanced students of history including working with on-line databases, and class discussion.

HIST 05510: Readings and Research in Global History 3 s.h.
This course is on of two courses, along with Readings and Research in History II, designed to strengthen the skills of students in historical research, writing, and analysis. It will expose students to key recent theoretical influences on professional historians, cover key developments in historiography from ancient times through the beginning of the twentieth century, and provide students with brief surveys of the major issues, including both classic and contemporary debates, within regionalized subfields of European and Global history. The course will provide students with opportunities for peer presentations, discussion, and leadership not necessarily available in other graduate courses. This course is required for all students enrolled in the Master's program in History and is a prerequisite for 600 level graduate courses but not for other 500 level graduate courses, including Readings and Research in History II. This course is usually offered once a year.

HIST 05511: Colloquium in American History I 3 s.h.
This course is the first graduate colloquium on the topic of American history that students in this program will take. The course focuses on the in-depth historical analysis of a selected theme in American history, including work with historical sources, critical reading of historians' accounts, intensive research and writing, and class discussion. Proposed topics include American Immigration History, Colonial North America, 1500-1775, the American Revolution and Early Republic, 1775-1820, Comparative History of the Americas, and Modern American and European Women in Historical Perspective.

HIST 05512: Readings and Research In History II 3 s.h.
Prerequisite: Admission to BA/MA or MA program in History
This course is one of two courses, along with Readings and Research in History I (HIST 05.510), designed to strengthen the skills of students in historical research, writing, and analysis. It will expose students to key recent theoretical influences on professional historians, cover key developments in historiography during the twentieth century, and provide students with brief surveys of the major issues, including both classic and contemporary debates, within the regionalized subfields of United States history. The course will provide students with opportunities for peer presentations, discussion, and leadership not necessarily available in other graduate courses. This course is required for all students enrolled in the Master's program in History and is a prerequisite for 600 level graduate courses but not for other 500 level graduate courses, including Readings and Research in History I (HIST 05.510). This course is usually offered once a year.

HIST 05514: Colloquium in American History II 3 s.h.
Prerequisites: HIST 05511
This course is the second graduate colloquium on the topic of American history that students in this program will take. For course topics, see HIST 05515 (Colloquium in American History I).

HIST 05516: Colloquium in American History III 3 s.h.
Prerequisites: HIST 05511 and HIST 05114
This course is the third graduate colloquium on the topic of American history that students in this program will take. Otherwise, the course is identical to Colloquium in American History I

HIST 05519: Political and Social Movements in the US 3 s.h.
This course will introduce students to the history of social and political movements in the United States to demonstrate how diverse organizations and major figures have challenged institutional discrimination. Students will learn how marginalized groups have sought varied ways to challenge prejudice, implicit bias, and oppressive power structures, using a historical, political, and social lens to understand racism, sexism, heterosexism, classism, ethnocentrisms, and religious intolerance. Students will use these lenses to assess contemporary actions to alleviate inequity.

HIST 05522: Colloquium in European History I 3 s.h.
This course is the first graduate colloquium on the topic of European history that students in this program will take. The course focuses on in-depth historical analysis of a selected theme in European history that students in this program will take. The course focuses on in-depth historical analysis of a selected theme in European history, including work with historical sources, critical reading of historians' accounts, intensive research and writing, and class discussion. Proposed topics include Ancient Historians, The French Revolution, The Holocaust in Europe, Popular Culture in Early Modern Europe, Social History of Early Modern Europe, 20th Century War and Society, Women in Early Modern Europe, and Modern American and European Women in Historical Perspective.

HIST 05523: Colloquium in European History II 3 s.h.
Prerequisites: HIST 05522
This course is the second graduate colloquium on the topic of European history that students in this program will take. Otherwise, it is identical to Colloquium in European History I.

HIST 05524: Colloquium in European History III 3 s.h.
Prerequisites: HIST 05523
This course is the third graduate colloquium on the topic of European history that students in this program will take. Otherwise, the course is identical to Colloquium in European History I.

HIST 05531: Colloquium in Global History I 3 s.h.
This course is the first graduate colloquium on the topic of global history that students in this program will take. The course focuses on in-depth historical analysis of a selected theme in global history, including work with historical sources, critical reading of historians' accounts, intensive research and writing, and class discussion. Proposed areas of specialization include Africa, Asia, Eastern Europe, and the Middle East.

HIST 05533: Colloquium in Global History II 3 s.h.
Prerequisites: HIST 05531
This course is the second graduate colloquium on the topic of global history students in this program will take. Otherwise, the course is identical to Colloquium in Global History I.

HIST 05535: Colloquium in Global History III 3 s.h.
Prerequisites: HIST 05533
This course is the third graduate colloquium on the topic of global history students in this program will take. Otherwise, the course is identical to Colloquium in Global History I.

HIST 05545: History of Crime 3 s.h.
Prerequisite(s): Graduate or senior status
This course examines crime in historical perspective, as a window into both social history and shifting approaches to historical study. Graduate students will work in-depth with analysis of both primary and secondary source materials.

HIST 05551: Graduate Independent Study 3 s.h.
Prerequisite: matriculation in the Master of Arts in History program
Students may complete up to 6 elective credits through the independent study option if they wish to pursue specialized knowledge not available through regular coursework. Students must take at least one colloquium related to the topic before engaging in independent study, then develop an individual study proposal with a full-time professor in the History Department. The proposal must be approved by the graduate coordinator prior to enrollment in the course.

HIST 05561: Early American History Seminar 3 s.h.
This course introduces students to in-depth historical analysis of a selected theme in Early American history, including work with historical sources, critical reading of historians' accounts, intensive research and writing, and class discussion.

HIST 05562: Nineteenth Century American History Seminar 3 s.h.
This course introduces students to in-depth historical analysis of a selected theme in Nineteenth Century American history, including work with historical sources, critical reading of historians' accounts, intensive research and writing, and class discussion.

HIST 05563: Twentieth Century American History Seminar 3 s.h.
This course introduces students to in-depth historical analysis of a selected theme in Twentieth Century American history, including work with historical sources, critical reading of historians' accounts, intensive research and writing, and class discussion.

HIST 05571: Ancient Mediterranean History Seminar 3 s.h.
This course introduces students to in-depth historical analysis of a selected theme in Ancient Mediterranean history, including work with historical sources, critical reading of historians' accounts, intensive research and writing, and class discussion.

HIST 05572: Medieval and Early Modern European History Seminar 3 s.h.
This course introduces students to in-depth historical analysis of a selected theme in Medieval or Early Modern European history, including work with historical sources, critical reading of historians' accounts, intensive research and writing, and class discussion.

HIST 05573: Modern European History Seminar 3 s.h.
This course introduces students to in-depth historical analysis of a selected theme in Modern European history, including work with historical sources, critical reading of historians' accounts, intensive research and writing, and class discussion.

HIST 05581: African History Seminar 3 s.h.
This course introduces students to in-depth historical analysis of a selected theme in African history, including work with historical sources, critical reading of historians' accounts, intensive research and writing, and class discussion.

HIST 05582: Middle Eastern History Seminar 3 s.h.
This course introduces students to in-depth historical analysis of a selected theme in Middle Eastern history, including work with historical sources, critical reading of historians' accounts, intensive research and writing, and class discussion.

HIST 05583: Russian History Seminar 3 s.h.
This course introduces students to in-depth historical analysis of a selected theme in Russian history, including work with historical sources, critical reading of historians' accounts, intensive research and writing, and class discussion.

HIST 05584: Latin American History Seminar 3 s.h.
This course introduces students to in-depth historical analysis of a selected theme in Latin American history, including work with historical sources, critical reading of historians' accounts, intensive research and writing, and class discussion.

HIST 05585: East Asian History Seminar 3 s.h.
This course introduces students to in-depth historical analysis of a selected theme in East Asian history, including work with historical sources, critical reading of historians' accounts, intensive research and writing, and class discussion.

HIST 05586: South and Southeast Asian History Seminar 3 s.h.
This course introduces students to in-depth historical analysis of a selected theme in South and Southeast Asian history, including work with historical sources, critical reading of historians' accounts, intensive research and writing, and class discussion.

HIST 05601: Master's Thesis in History I 3 s.h.
Prerequisite: HIST 05510 and HIST 05512
This course requires students to design and begin implementing their own research project to be used to satisfy the program's thesis requirement. Under the guidance of a member of the History Department faculty who agrees to serve as Thesis Advisor, the student will develop a Research Prospectus for their thesis that will consist of an Introduction and Statement of the Problem, a Literature Review, and a brief summary of the proposed research. The student will defend the prospectus before at least two History Department faculty. Prerequisites are two courses in historiography and research methods, Readings and Research in History I (HIST 05.501) and Readings and Research in History II (HIST 05.502). The student will begin implementing the research after obtaining the Committee's approval.

HIST 05602: Master's Thesis in History II 3 s.h.
Prerequisite: HIST05510 and HIST 05512and HIST 05601
In Masters Thesis in History II, the student will write and complete a Masters Thesis. In Masters Thesis in History I (HIST 05.601), the student will have designed and begun implementing their own research project. In this course, under the guidance of a member of the History Department faculty who has agreed to serve as Thesis Advisor, the student will complete the writing of the Thesis. The thesis should, like other graduate courses, engage students in critical reading of historical accounts and provide them with opportunities to reconstruct historical events from original documents, conduct research that is based on primary sources and applies historical methodologies, and write coherent historical analysis. Prerequisites are two courses in historiography and research methods, Readings and Research in History I (HIST 05.510) and Readings and Research in History II (HIST 05.502); and Masters Thesis in History I (HIST 05.601).

CASE 90510: Power & Privilege: The Social Construction of Difference 3 s.h.
This course is situated within a framework of sociopolitical development, informed by a range of critical theoretical perspectives, and advanced by an understanding of the nature of both individual and systemic change. Student will explore how institutions, social systems and individual experiences create and sustain systems of power and privilege that ensure access for some while excluding others. Students will begin to develop a critical understanding of the cultural, political, economic, and the institutional forces that perpetuate systems of privilege and oppression, and to develop a critical consciousness, reflective practice, and commitment to action in relation to the policy, curriculum, pedagogy, and practices they employ.

CASE 90520: Participatory Research Methods in Context 3 s.h.
This course will introduce students to participatory research methods and decolonizing research methods, including Youth Participatory Action Research (YPAR), Feminist Participatory Action Research (FPAR), Participatory Action Research (PAR), community engaged scholarship, program evaluation, and design based research. Students will study current examples of this work, design and conduct a study in their professional context.

CASE 90521: Ethnography in Urban Settings 3 s.h.
This course focuses on ethnography as an approach to research in education that enables the researcher to explore culture or cultural phenomena using detailed, in-depth methods. Students will consider the unique insights that ethnography offers into key issues in urban education.

CASE 90530: Curriculum Theories in Urban Education 3 s.h.
This course is designed for pre-service and in-service teachers currently working in classroom settings and addresses curriculum theory and basic principles of curriculum and instruction. Through the lenses of curriculum theories and ideologies, students will examine their own curricular beliefs, from where they came, and how they affect how they teach and what they teach. Students will work to understand how curricular orientations can affect the experiences of our students and of ourselves. Using theoretically-oriented lenses, students will also examine the following: race and multicultural issues; curricular accountability on student achievement, teacher retention, and teacher burnout; and students' social class as a possible explanation for achievement.

CASE 90534: Disability Studies 3 s.h.
This course explores critical approaches to dis/ability and in/exclusion, including an analysis of shifting social and cultural constructions of dis/ability through an interdisciplinary exploration of autobiography, narrative, film, legal and policy issues and research literature.

CURR 29515: Introduction To Planning And Teaching 4 s.h.
Students will begin their development of the skills necessary to enhance the planning, teaching, and learning processes. Students will be expected to ground their future classroom practice in a strong research base through a study of planning and teaching models and the latest literature on effective teaching.

CURR 29550: Public School Curriculum K-12 3 s.h.
A course that deals with a critical appraisal of current public school curriculum practices. Emphasis will be placed on the following aspects of the K-12 curriculum: the subject matter curriculum, the humanistic curriculum, role of subject matter specialist, the nature of the disciplines, the taxonomies of educational objectives (affective, cognitive, psychomotor). This is a basic course which is a prerequisite for any further study in curriculum. This course may not be offered annually.

CURR 29590: Curriculum Evaluation 3 s.h.
Emphasis will be on identification, organization, and practical applications of selected curriculum evaluation models. This course is designed to enable a student, or a team of students, to determine what and when to evaluate, whom to evaluate, and how to evaluate. Students will be expected to demonstrate a knowledge base in curriculum theory and development. A curriculum evaluation project is required. This course may not be offered annually.

CURR 29600: Specialization Seminar And Investigation I 3 s.h.
The student must complete a special project in the field of specialization which demonstrates his ability to apply theory and research. Focuses upon applying general and specialized knowledge to the examination of proposals and research on the processes of change and innovation.

CURR 29601: Specialization Seminar And Investigation II 3 s.h.
The student must complete a special project in the field of specialization which demonstrates his ability to apply theory and research. Focuses upon applying general and specialized knowledge to the examination of proposals and research on the processes of change and innovation.

ECED 23211: Seminar: Principles and Pedagogies in the Inclusive Classroom 1 s.h.
Prerequisite: Admission into Early Childhood Program; Corequisite: INCL 02210
This Seminar course serves as the vehicle for domain-specific application of the principles and pedagogies that promotes the use of positive management techniques supportive of all learners in an inclusive setting. Through case study scenarios, videos, virtual, and live field experiences, students will have multiple opportunities to reflect on and apply new learning to enhance their understanding of proactive behavior strategies and supports.

ECED 23320: Building Brains: Competency and Resiliency 3 s.h.
Prerequisites: READ 30320 AND ECED 23211 AND INCL 02210; Concurrent Enrollment Allowed. Corequisite: ECED 23220
This course will build upon General Education coursework in Child Development, Human Exceptionality, and Educational Psychology. Teacher candidates will apply knowledge from these foundational courses, as well as prior courses on diversity, to understand how young children, birth through age eight, including children with special needs, develop and learn. This course will highlight a risk and resiliency perspective with a focus on protective factors assessed through intentional observations and screenings. Teacher candidates will apply theories of child development through formal and informal observations and in-depth child studies in inclusive classrooms. Emphasis will be made on fostering social and emotional development and developing resiliency. Teacher candidates will thoughtfully plan developmentally appropriate learning experiences to foster growth and connect with learning standards. Clinical classroom visits are required.

ECED 23322: Planning, Integrating, And Adapting Curriculum: Math And Science 3 s.h.
Corequisite: ECED 23321; Prerequisites: READ 30320 AND ECED 23311 AND MATH 01201 AND MATH 01301 with Minimum Grade of C-
This course is designed to enable teacher candidates to understand and plan curriculums for teaching math and science. This course will start from the perspective of teacher candidates' experiences of learning science and mathematics. They will reflect on their own prior experiences with math and science and discover the impact of those experiences on their feelings of efficacy. Teacher candidates will experience teaching strategies and processes that we expect them to master and use in teaching math and science for young children in inclusive settings. Within an integrated framework, teacher candidates will develop the conceptual knowledge base for developing a coherent science and mathematics program with developmentally appropriate learning experiences. Clinical experiences are required.

ECED 23430: Observation, Assessment, And Evaluation Of Diverse Learners 2 s.h.
Corequisites: ECED 23431 AND ECED 23432; Prerequisites: ECED 23321 AND ECED 23322
This course provides teacher candidates with a dynamic hands-on exploration of the measurement and evaluation of children who are in the developmental period known as early childhood. Teacher candidates will learn about standardized measurement and other types of assessments that are appropriate for young children, including children with special needs. The tools of authentic assessment including checklists, rating scales, or observations will be used within the candidates' field experience in both regular and special education settings. Research into the rationale of assessment of young children will also be explored. Clinical experiences are required.

ECED 23431: Planning, Integrating And Adapting Curriculum Across Content Areas 3 s.h.
Corequisite: ECED 23430 Prerequisites: ECED 23321 and ECED 23322
This curriculum course considers the areas of Social Studies, Music, Movement, Arts, Drama, and Health/Physical Education as disciplines with a major focus on the integration of curriculum in a rich learning environment. Teacher candidates will also design learning communities that enhance all aspects of learning, by creating environments that reflect the learning standards. Further, teacher candidates will learn of facilitating interdisciplinary units and projects within an early childhood classroom in inclusive settings. Clinical experiences are required.

ECED 23510: Curriculum Development In Early Childhood Programs 4 s.h.
This course is focused on the content and characteristics of developmentally appropriate curriculum to support growth, development, and learning of young children. Factors that influence early childhood curriculum development, the important role of family and culture, the integration of play, literacy, and assessment are studied. Students learn to apply the recommended standards for developmentally appropriate practices and curriculum. This course also includes a field experience with visitations to early childhood classes/programs.

ECED 23511: Understanding Child Development And Behavior In The Classroom 3 s.h.

This course has two main components: Understanding child development and supporting young children's social emotional development in inclusive early childhood settings. Teacher candidates will utilize research in child development including theories and perspectives from neuroscience and psychology to achieve a holistic understanding of development in the first five years in order to guide young children's social emotional development. Teacher candidates will work with children in diverse settings and actively support young children with emerging social-emotional competencies. Completing field based assignments is required.

ECED 23512: Exploring the World: Literacy, Social Studies, and Creative Experiences in Early Childhood 3 s.h.

Prerequisites: ECED 23.511

This course provides candidates with knowledge, skills, and dispositions necessary to create authentic learning experiences for young children through the integration of literacy, social studies, and creative experiences. Candidates will explore various curriculum models and heavily use project approach and other play based and developmentally appropriate methods to teach these subject areas in inclusive early childhood settings. Course content will emphasize diversity, family and community as the foundation of curriculum with young children. Candidates will be required to develop and teach lessons in the preschool classrooms and to develop a theme based unit plan built on the students data collected from the preschool classroom.

ECED 23513: Assessment In Early Childhood Education 3 s.h.

Prerequisites: ECED 23512, ECED 23514 andCorequisite: ECED 23515

This course focuses on analyzing assessment methods in early childhood education. Candidates will examine different methods and tools of assessment, explore the concept of assessment driven instruction, and learn to develop differentiated instructional strategies based on student assessment data. They will also learn to share the data with families and other professionals in the field. In addition to assessing students, candidates will explore early childhhood program assessment tools such as teh Early Childhood Environmental Rating Scale-Revised (ECERS-R), the Classroom Assessment Scoring System (CLASS), and the Assessment of Practice in Early Elementary Classrooms (APEEC), in order to ensure comprehensive quality of the education. Conducting a case on one child in preschool level will be required for this course.

ECED 23514: Family, Community, And Professional Ethics 3 s.h.

Prerequisite: ECED 23511Corequisite: ECED 23512

This course focuses on parent-child relationships and partnerships between parents and their schools and communities. The course examines the role of the parent and the development of young children (P-3). Issues related to P-3 children will be studied along with topics such as family dynamics, curriculum, parental roles, and cultural diversity. Professional ethics will be integrated throughout this course in relation to working with young children and their families both in individual and group settings. Techniques for involving parents and families in school environments will be examined through discussion and lecture. Developing a plan for collaborating with diverse families will be required for this course.

ECED 23515: Young Scientists: Science, Technology, Engineering, and Math experiences in Early Childhood (3) 3 s.h.

Prerequisites: ECED 23512, ECED 23514Corequisites: ECED 23513

This course provides candidates with knowledge, skills, and dispositions necessary to create authentic learning experiences for young children through the integration of science, technology, engineering, and math (STEM). Candidates will modify the learning environment and materials, utilize project approach and use other play based and developmentally appropriate methods in teaching STEM subject areas in inclusive early childhood settings. Course content will emphasize intellectual and cognitive growth of young children and the ways to engage children in higher level thinking skills such as inquiry, collaboration, critical thinking, and creativity. Candidates will teach children to complete field-based assignments.

ECED 23521: Continuous Quality Improvement in Early Childhood: Research & Policy 3 s.h.

This course will provide an overview of early childhood quality improvement initiatives and efforts for continuous quality improvement (CQI). Students will examine the current landscape of research, policy and practice as it relates to quality improvement efforts (including the role of technical assistance) and CQI, as well as frameworks and theories of change. Students will also engage in a critical analysis of the definition of quality using theoretical frameworks as reference.

ECED 23522: Critical Perspectives on Coaching & Mentoring in Diverse Early Childhood Settings 3 s.h.

This course focuses on the practices coaches and mentors utilize in early childhood settings. The course will provide a thorough overview of different frameworks and theories of adult learning along with additional fundamental critical perspectives examining the ways in which people learn and know. Students will investigate models for reflective practices and apply them to their own work and experiences in the field through the lens of mentor/coach and mentee/coachee.

ECED 23523: Access & Equity: Culturally Responsive Practices in Technical Assistance 3 s.h.
Prerequisite(s): ECED 23521 and ECED 23522
This course will build on the literature on culturally responsive competencies and practices to provide a framework for the early childhood technical assistance process. Students will examine critical issues such as gender, language, age, context, sexuality, class, and culture and investigate the ways that leaders can be culturally responsive to the programs in the cultural and community contexts they are situated as they provide technical assistance.

ECED 23524: Implementation Science and Quality Improvement Initiatives 3 s.h.
Prerequisite(s): ECED 23521 and ECED 23522
This course will focus on building an understanding of implementation science as a framework for helping translate research to practice in early childhood education. Students will integrate implementation science components to help implement evidence-based practices in quality improvement initiatives as a self-study. Students will draw on their past and current field experience to develop a case study that involves a quality improvement plan for a program.

ECED 23526: Developing Expertise as an Agent of Change within Early Childhood Systems 3 s.h.
Prerequisite(s): ECED 23523 and ECED 23524
This course will examine the early childhood professional's role as an agent of change by analyzing literature on equity, access, policy, systems, community building, family engagement and advocacy as it relates to early childhood education. Students will integrate multidisciplinary literature to build their knowledge, skills, and dispositions as leaders. Students will apply their knowledge by engaging in an advocacy project that will serve educational and academic communities of early childhood care and education in multiple ways.

ECED 23531: Equity and Social Justice in Early Childhood STEM Education 3 s.h.
In this course, students will develop a critical understanding of the historical, cultural, economic, and other institutional forces that influence how STEM is taught in classrooms and out of classroom contexts. Topics explored include theoretical perspectives on the teaching of STEM, access to STEM resources, approaches to narrowing demographic gaps in STEM outcomes, contemporary models of STEM curriculum, and the integration of STEM Education through play-based and project-based learning.

ECED 23532: Experimenting with Art and Matter in Early Childhood 3 s.h.
Prerquisite: ECED 23531
This course aims to deepen students' understanding of social constructivist philosophies of teaching with a focus on the Reggio Emilia Approach. The approach will emphasizes children's capabilities, active construction of knowledge, and multiple ways of experiencing the world. Students will learn how to teach experimental science through emergent projects based on children's curiosity and interests. Using the interconnected roles of the three teachers in the Reggio Emilia Approach -teacher, parent, and environment-, students will learn how to build momentum and sustain deep engagement in science-focused projects.

ECED 23533: Math, Engineering and Technology in Early Childhood 3 s.h.
Prerequisite: ECED 23531
This course will enable students to utilize math, engineering and technology in creative ways with young children and develop a tinkering mindset that is playful, failure-positive, and emphasizes collective learning. Students will implement frameworks that position children as creators, inventors, problem-solvers, designers, and innovators. Finally, students will learn how to develop makerspaces in schools, use digital tools such as coding with young children, and design engineering challenges based on real-world problems.

ECED 23534: Environment and Nature in the Early Years 3 s.h.
Prerequisite: ECED 23531
This course critically examines children's relations with nature/environment. Students will learn current and emerging theories and practices that relate to child-nature discourses. Students will examine critical and creative interventions that specifically bring STEM disciplines into conversation with nature and culture in early childhood settings and apply their learning in clinical settings.

ECED 23535: Inquiry for Early Childhood Educators 3 s.h.
Prerequisite: ECED 23531
In this course, students will examine key literature on participatory research methodologies, including practitioner inquiry, a form of systematic and intentional inquiry carried out by teachers, principals, and other practitioners. Students will hone research questions, design action research projects within schools, apply methods of data collection and analysis, and create and share new knowledge about practice.

ECSE 10500: Characteristics of Young Children with Disabilities (birth-five) and their Families 3 s.h.
This course provides foundation content for key stakeholders to better understand the field of Early Childhood Special Education (birth-five). Guiding theoretical frameworks, historical considerations, and disability-specific characteristics will be presented in a strength-based, family-centered context. Students will have multiple opportunities to reflect on and present new learning.

ECSE 10501: Methods for Assessing and Teaching Infants and Toddlers with Disabilities 3 s.h.
Prerequisite(s): ECSE 10500
This course provides the knowledge and skills necessary to be effective professionals in providing early intervention services for families, infants, and toddlers with disabilities, and those at-risk for development delays. Emphasis is placed on parent-professional collaboration and interagency/interdisciplinary planning, assessment, and design of family-focused, culturally sensitive Individualized Family Service Plans (IFSP). The course includes an overview of a variety of curriculum models, assessments, and instructional strategies for intervention practice (includes field experience).

ECSE 10502: Methods for Assessing and Teaching Preschool Children (3-5) with Disabilities 3 s.h.
Prerequisite(s): ECSE 10500
This course provides foundation content for educators to better understand the field of Early Childhood Special Education (3-five). Age appropriate assessments, DEC best practice guidelines and NJ content standards will be presented in a strength-based, naturalized environment and family-centered context. Students will have multiple opportunities to reflect on and present new learning.

ECSE 10503: Supporting Diverse Families, Community Partnerships, and Transitions 3 s.h.
Prerequisite(s): ECSE 10500
This course provides foundation content for educators to better understand the field of Early Childhood Special Education. The content of this course will focus on supporting young children with special needs and collaborating with their families. Course material will include early childhood transitions and the effective collaboration with community and educational stakeholders. Students will have multiple opportunities to reflect on and present new learning.

ECSE 10504: Self-Study Project Inquiry in Early Childhood Special Education 3 s.h.
Prerequisite: ECSE 10500
This course provides a culminating capstone experience for students enrolled in the Early Childhood Special Education Certificate of Graduate Study (ECSE COGS). Students will select a timely area of inquiry in ECSE that directly or indirectly impacts interdisciplinary professionals, families, and/or children with suspected or diagnosed disabilities across diverse birth-five settings. Students will complete a literature review, service project, and presentation to relevant stakeholders.

EDST 24502: Initiation Of Internship Project 1 s.h.
see EDST24.608

EDST 24565: Analysis And Application Of Research 3 s.h.
Students will develop skills necessary to critically analyze and interpret educational research. Interpretation of statistics, analysis of research design, and the use of educational data bases will be components of the course. Emphasis will be on the application of educational research to actual classroom problems through a case study method as well as student-designed projects.

EDST 24602: Development Of Internship Project 1 s.h.
See EDST24.608

EDST 24608: Internship Project Report 2 s.h.
Students will design and complete an individual internship project applying scientific inquiry and research methodology to an identified problem of interest in an area related to instructional practice, curriculum development and/or learning. These courses, Initiation of Internship Project (1 S.H.), Development of Internship Project (1 S.H.) and the Internship Project Report are completed during Phases II, III and IV of the Master of Science in Teaching Program.

EDUC 01500: Trends And Practices In Classroom Teaching 3 s.h.
Corequisites: ELEM 02511
This course focuses on emerging trends in elementary and subject matter classroom practices. Topics include standards and accountability, constructivist and experiential teaching, inclusion and differentiation, culturally responsive teaching, and collaboration with families and communities. Special emphasis is placed on the background of each trend, related issues, and implications for practice.

EDUC 01601: Clinical Internship I 3 s.h.

EDUC 01603: Clinical Seminar I 2 s.h.
Students will complete a field experience focusing on sequenced observations and supervised beginning teaching experiences in a variety of school settings. Specific competencies shall be developed in: 1) teaching and learning, 2) curriculum, 3) pupil guidance, and 4) classroom organization and management. Concurrent seminar study will focus on knowledge of the special needs of students, applications of educational technology and student assessment and evaluation.

EDUC 01605: Clinical Internship II 7 s.h.

EDUC 01607: Clinical Seminar II 1 s.h.
Students will complete a supervised semester-long teaching internship in an assigned classroom and school setting. They will research and apply general and specialized knowledge to the processes involved in full-time classroom teaching and other teacher responsibilities. Seminar study will emphasize effective teaching practices that extends their previous learning and current intern teaching.

EDUC 01608: Internship Project Report 1 s.h.
Students will design and complete an individual internship project applying scientific inquiry and research methodology to an identified problem of interest in an area related to instructional practice, curriculum development and/or learning. These courses, Initiation of Internship Project (1 S.H.), Development of Internship Project (1 S.H.) and the Internship Project Report are completed during Phases II, III and IV of the Master of Science in Teaching Program.

EDUC 01610: TCHNG FOR EQUIT/ACHIEV DVRS CL 3 s.h.
This course focuses on issues and concepts in critical multicultural education and their implications for teaching and learning in diverse school settings. Students will critically examine influences on students' schooling experiences and the historic and current challenges of non-dominant students in the U.S., such as racism, discrimination, school organization, and the social and political contexts of school and society. The course will also focus on methods to build a multicultural classroom that supports equity and achievement for all students.

EDUC 01624: Educational Change 3 s.h.
Prerequisite: ELEM 02550 with a minimum grade of B
To assume leadership roles and to become change agents for their respective schools, teachers will analyze the influences, trends, social and political forces that generate and impact educational change at varying levels, i.e., at the classroom, school, community, state, and national levels. They will develop knowledge of the stages of systemic education change and strategies to achieve and sustain momentum for change. Various field work components will be integrated throughout this course.

EDUC 01700: Leadership Through Professional Learning Communities 3 s.h.
This course is designed to provide Ed.D. students with the opportunity to plan and put into practice their knowledge, skills, and dispositions for providing leadership through Professional Learning Communities. This course will begin by examining the critical stages of group development in establishing Professional Learning Communities, through the lens of detailed school-based examples. Students will follow this examination by engaging in their own identification of an educational issue, and complete a subsequent PLC plan, implement the plan, document and analyze experience and report.

EDUC 02602: MST Professional Seminar 1 s.h.
Prerequisites: EDUC 01610 and SELN 42954 and EDUC 01601 and either ELEM 02513 or SMED 60501. Corequisites: EDST 24504 and EDUC 01605
This course provides support to MST candidates as they undergo their student teaching experience (Clinical Internship II). Candidates are required to reflect regularly on their teaching and school experiences and use these reflections as a basis for discussion in the course. Throughout the semester, they will make connections between the course readings and discussions and their professional practice. Specific course topics will include classroom management, assessment, inclusion, culturally responsive teaching, motivating students, working with families and communities, the job search, and professional development.

ELEM 02210: Seminar: Principles and Pedagogies in the Inclusive Classroom 1 s.h.
Co-requisite: INCL 02210
This seminar course serves as the vehicle for domain-specific application of the principles and pedagogies that promote the use of positive management techniques supportive of all learners in an inclusive setting. Through case study scenarios, videos, virtual and live experiences in Early Childhood, Elementary, Art, Music, and Physical Education instructional settings, students will have multiple, varied opportunities to reflect on and apply new learning to enhance their understanding of proactive behavior strategies and supports.

ELEM 02338: Practicum In Mathematics And Literacy 1 s.h.
Corequisites: ELEM 02336 and READ 30351 Prerequisites: ELEM 02319 and SPED 08316
This field experience course provides an opportunity for candidates in the Elementary Education Specialization to practice their developing instructional skills once a week in a K-5 classroom setting. Candidates will work with partners in assigned classrooms to assist with literacy and mathematics instruction and to take the lead in developing and teaching lessons in literacy and mathematics.

ELEM 02512: Teaching Math, Science, And Health In Elementary Classrooms 3 s.h.
Prerequisites: ELEM 02511 and EDUC 01500Corequisites: READ 30555
This course focuses on understanding and developing inquiry-based, interdisciplinary instruction based on national and state standards in mathematics, science, and health at the elementary school level. Students will critically examine the principles of inquiry-based instruction and develop interdisciplinary lesson plans along with performance-based assessments. As a culminating project, students will develop a hands-on learning kit for the elementary classroom.

ELEM 02513: Teaching Language Arts, Social Studies And The Arts In Elementary Classrooms 3 s.h.
Prerequisites: READ 30515 and ELEM 02512Corequisites: EDUC 01601 and EDUC 01610and SELN 42954
This course examines the use of established elementary education content standards and teaching methods in social studies, the arts, and language arts and how interdisciplinary, thematic units of inquiry facilitate meeting those standards. Students apply current research on how children learn and on effective teaching methods in social studies, the arts, and language arts. Students also apply instructional knowledge and skills they are developing related to inquiry-based interdisciplinary instruction, assessment, and differentiating that instruction for elementary students in the co-requisite field internship.

ELEM 02539: Contemporary Curriculum Processes/Elementary Language Arts 3 s.h.
This course examines current theory and practice in the teaching of all of the language skills of the elementary school. Criteria are developed for evaluating teaching practices in terms of today's demand for improved and expanded communications skills. This course may not be offered annually.

ELEM 02540: Contemporary Curriculum Processes/Elementary Mathematics 3 s.h.
The primary purpose of this course is to examine and evaluate practices of teaching and criteria of evaluating mathematics in the elementary grades. Criteria will be obtained by studying research findings and examining the recommendations of authorities in the field. Courses of study will be evaluated using established criteria. This course may not be offered annually.

ELEM 02552: Research On Children's Mathematical Learning 3 s.h.
This course introduces the graduate student to theories of how elementary and middle-school students learn mathematics and to current research on children's thinking and learning of mathematics. It surveys research findings on the child's understanding of mathematical concepts such as number, operations, fractions and proportions, measurement, and space. The focus of the course is how children learn mathematics, and it will enable the graduate student to see mathematics from the standpoint of the elementary and middle school child. This course will aid the teacher in discerning a child's understanding of mathematics as a basis for determining the type of mathematics instruction for which he/she is ready.

ELEM 02556: Principles Of Identification And Treatment Of Mathematics Deficiencies 3 s.h.
This course introduces the student to the principles of identifying, prescribing, planning and teaching for mathematics deficiencies in elementary school children. Students have the opportunity to design a diagnostic instrument and plan an individualized instructional program based upon findings. This course may not be offered annually.

ELEM 02601: Seminar In Elementary Teaching 3 s.h.
Each student is expected to conceive, conduct and report an investigation that will display sound knowledge of educational theory, appropriate research procedures and skill in communication.(ELEM02.600 offered in fall only; ELEM02.601 offered in spring only.)

FNDS 21230: Characteristics of Knowledge Acquisition 3 s.h.
This course will focus on how human beings think, process information and acquire skills. Discussion of learning philosophies and applications in a variety of settings will be addressed. Methods of inquiry, reflection, motivation, creativity and critical thinking will be explored.

FNDS 21530: Foundations Of Multi-Cultural Education 3 s.h.
This course is designed to focus on the key relationships between formal education as a social and cultural institution in American society and multicultural education as a response to contemporary societal needs. The course examines the areas of curriculum, pedagogy and evaluation in multicultural education as they affect and are affected by the education professional. The course requires empirical investigation and subsequent analysis through selected topics in research in Intercultural Education.

INCL 02310: STREAM 1: Social Studies, ELA, and the Arts 2 s.h.
Prerequisites: INCL 02250 and INCL 02330Co-requisites: INCL 02315 and INCL 02320 and INCL 02325and READ 30351
This course explores the use of established elementary education content standards and pedagogical methods in social studies, English/language arts, and the fine arts, and how interdisciplinary, thematic units of inquiry facilitate meeting those standards. Students apply current research on how children learn and on effective teaching methods in social studies, English/language arts, and the fine arts. Students also apply instructional knowledge and skills they are developing related to inquiry-based, interdisciplinary instruction, assessment, and differentiation in the co-requisite STREAM I Clinical Experience course.

INCL 02315: STREAM I Clinical Experience 1 s.h.
Prerequisites: INCL 02250 and INCL 02330Co-requisites: INCL 02310 and INCL 02320 andINCL 02325 and READ 30351
The STREAM I Clinical Experience course serves as the first of two clinically-based experiences during the STREAM professional courses. This course provides teacher candidates enrolled in the co-requisite STREAM courses opportunities to apply educational knowledge, theories, and frameworks across a semester of clinical classroom teaching experience. In addition, a series of discussions, readings, and course assignments will focus teacher candidates on the teaching cycle of lesson planning, implementation, assessment, and reflection/revision. In this course, candidates develop and present evidence of the comprehensive knowledge, skills, and dispositions expected of teaching professionals.

INCL 02320: STREAM II: STEM & Health in the Inclusive Classroom 3 s.h.
Prerequisites: INCL 02250 and INCL 02330Co-requisites: INCL 02310 and INCL 02325 and INCL 02315and INCL 02335 and READ 30351
This course focuses on understanding and developing inquiry-based, interdisciplinary instruction based on national and state standards in science, technology, engineering, mathematics, and health education at the elementary school level. Students will critically examine the principles of inquiry-based instruction and design-based instruction, develop interdisciplinary lesson plans, and develop performance-based assessments. Utilizing current research findings about how students develop STEM & Health concepts and processes, candidates will develop an understanding of teaching and learning related to STEM & Health disciplines at the elementary level. Teacher candidates will develop repertoire of instructional strategies and will develop and analyze effective science, technology, engineering, and mathematics and health instruction.

INCL 02330: Differentiating Instruction in the Inclusive Classroom 2 s.h.
Prerequisites: SPED 08130 and INCL 02210 and ELEM 02210Corequisite: INCL 02250
This course focuses on how the diverse needs of individuals with educational disabilities/differences can be met within the general education classroom environment. Emphasis will be on communication and collaboration with parents and education professionals, understanding of linguistic and cultural differences, and utilizing instructional strategies in response to the results of differentiated assessments to meet individual needs.

INCL 02440: Diversity Seminar 2 s.h.
Prerequisites: ELEM 02448 (may be taken concurrently) or INCL 02445 (may be taken concurrently)
This Diversity Seminar is a capstone course in the Elementary Education program and will help teacher candidates enrolled in clinical practice reflect upon and better understand their practitioner experiences through a series of discussions, readings, and course assignments. In this course, candidates develop a philosophy of teaching; gather and present evidence of their comprehensive knowledge, skills, and dispositions expected in this profession; and demonstrate knowledge of current critical and contemporary issues facing educators and other stakeholders in education.

INCL 02550: International Experiences in Education 2 s.h.
This course encourages and facilitates global experiences of an educational and cultural nature for students at all stages in the progression of their university coursework. It will enhance students' historical, cultural, and social perspectives within the context of policy, human rights, health, social and educational representations, and technology. This course will be beneficial for all students in developing their professional dispositions. Students participate in pre-travel orientation meetings and a post-travel meeting as determined by the destination and the course instructor. In order to receive credit for the course, students must attend 90% of the pre-travel meetings and the post-travel meeting and submit a final project which includes reflective summary of their international experience.

LDTC 18500: INDEPENDENT STUDY 1 to 6 s.h.

LDTC 18503: Foundations Of Learning Disabilities 3 s.h.
A general introduction to learning disabilities, with emphasis upon remediation of basic skills and pedagogical rationale. Students will become familiar with the various types of disorders encountered in pupils with learning disabilities and with appropriate instructional techniques and materials.

LDTC 18504: Assessment Of Learning Disabilities 3 s.h.
In this two semester sequence, emphasis will be on evaluation and remediation of learning disorders in school age children. A case study is required. Enrollment limited to students matriculated in the Learning Disabilities program. (LDTC18.504 is offered in the fall semester and LDTC18.505 is offered in the spring semester.)

LDTC 18505: Correction Of Learning Disabilities 3 s.h.
In this two semester sequence, emphasis will be on evaluation and remediation of learning disorders in school age children. A case study is required. Enrollment limited to students matriculated in Learning Disabilities program. (LDTC18.504 is a prerequisite.LDTC18.505 is offered in the spring semester.)

LDTC 18510: Applied Theories Of Learning 3 s.h.
Educators will develop and articulate their own theories of learning after examining carefully and critically the prevalently existing and competing theories of learning. The study of motivation and its effect on learning including the use of rewards and incentives will be covered as well.

LDTC 18516: Applied Tests And Measurements 3 s.h.
Emphasis is placed upon data-gathering, the evaluation of data and the use of data in educational measurement. Standardized tests, both group and individual, will be studied. Generally, enrollment is limited to those who have been formally admitted to the student personnel services, learning disabilities and school psychology programs.

LDTC 18520: Neurological Bases Of Educational Disorders 3 s.h.
The student will study the nature of physiological readiness for learning with regard to the various disabilities. The varieties of physical, mental, and learning disabilities will be related to the neurophysiological basis for learning.

LDTC 18525: Advanced Assessment Techniques 3 s.h.
This course is designed for the advanced graduate student in learning disabilities. It provides for the development of competence in a variety of assessment instruments useful in differential diagnosis of complex learning problems. (LDTC 18504 and LDTC 18505 are prerequisites)

LDTC 18540: Motor Development In Young Children With Disabilities 3 s.h.
The course investigates motor development resulting in disabling conditions in young children. Major theorists and research are an integral part of the course work. Assessment options and research-based interventions are explored. This course may not be offered annually.

LDTC 18545: Language Development In Young Children With Disabilities 3 s.h.
The course investigates language acquisition and the physiological, environmental and psychological factors which may influence that development in the young children. This course may not be offered annually.

LDTC 18550: Foundations In Early Childhood Special Education 3 s.h.
The course surveys the bases of disabilities in young children. Diagnostic techniques, materials and methods are explored. Classic studies and current research will be studied.

LDTC 18600: Seminar And Research In Learning Disabilities 3 s.h.
This course considers current issues, trends, problems, and research of significance to learning disabilities. Students complete a thesis/project which evidences capacity for research and independent thought. Registration by permission of the program advisor only. The comprehensive examination is taken during LDTC18.601.

LDTC 18601: Seminar And Research In Learning Disabilities 3 s.h.
This course considers current issues, trends, problems, and research of significance to learning disabilities. Students complete a project which evidences capacity for research and independent thought. Registration by permission of the program advisor only. The comprehensive examination is taken during LDTC18.601.

LDTC 18650: Clinical & Field Experiences In Learning Disabilities 3 s.h.
Students engage directly in supervised case work with children demonstrating learning disorders. Assessment and appropriate, research-based remediation of learning problems, consultation skills and in-service program design are required in a 120-clock hour clinical and field setting. A seminar is also a component of this course. Only matriculated students may register for this course.

METL 01624: Educational Change 3 s.h.
Prerequisite: ELEM 02550 with a minimum grade of B
To assume leadership roles and to become change agents for their respective schools, teachers will analyze the influences, trends, social and political forces that generate and impact educational change at varying levels, i.e., at the classroom, school, community, state, and national levels. They will develop knowledge of the stages of systemic education change and strategies to achieve and sustain momentum for change. Various field work components will be integrated throughout this course.

METL 50511: Teacher Leadership and Learning Communities 3 s.h.
This course focuses on identifying and unpacking the standards that guide teacher leadership in practice. One of the major elements of teacher leadership is the professional learning community. This course will prepare teacher leaders for planning, implementing, leading, and evaluating the effectiveness of professional learning communities.

METL 50512: Curriculum Development for Teacher Leaders and Other School Professionals 3 s.h.
This course provides background in goals, objectives, assumptions, values, issues, and theory related to contemporary curriculum. Topics include learning and curriculum, the nature and structure of knowledge and curriculum design, and evaluation criteria specifically for teacher leaders, administrators, and other school professionals (e.g., school psychologists, school counselors, consultants) for curriculum planning. This is a basic course, which is a prerequisite for further study in curriculum.

METL 50513: Teacher Leadership in Practice 3 s.h.
Prerequisite: METL 50511
In this course, students will explore the foundations of teacher leadership as well as develop understandings about how research is conducted in the field and the elements they will put into place to make that happen in the second course in this two part course series (METL 50514). Students will read seminal research pieces in an effort to develop their abilities for conducting research in the field of teacher leadership.

METL 50514: Agency in Teacher Leadership 3 s.h.
Prerequisite: METL 50513
In this course, students will explore agency, their personal capacity to act in response to motivations within their own pedagogical environment. Further, through implementation of a problem of practice designed in the first course of this two part series (METL 50513), they will enact their power for change as they build their capacities to shape critically their responses to educational practices and processes. The ultimate goal of this course is for students to become teacher leaders who transform their own practices to ensure the best educational outcomes for their students.

METL 50515: Teacher Leadership Capstone 1 s.h.
Prerequisite: METL 50514
This course is required only for students interested in applying for the New Jersey Department of Education Teacher Leadership Endorsement. This capstone course assists teacher leaders in gathering evidence and documenting their competence in meeting the Teacher Leaders Model Standards. The culminating activity is an electronic portfolio and presentation.

METL 50516: Analysis of Classroom Teacher Behavior 3 s.h.
Prerequisite: METL 50511
Through a review of the literature and self-analysis, students will examine relationships between teacher personality characteristics, classroom processes, and pupil achievement. All students will have opportunities to identify variables which research reveals as significantly correlated with pupil growth. Ample opportunity will be provided for students to develop expertise in the use of a low-inference, relatively objective, and highly reliable system of analyzing classroom interaction. This course may not be offered annually.

METL 50550: Self-Study in Teacher Leadership 1 s.h.
Prerequisite(s): METL 50512 & METL 50514 & METL 50516 & LDTC 18510
During the final semester of their studies in the Master of Education in Teacher Leadership degree, students will work closely with a faculty member to conduct a scholarly self-study that examines how their emerging teacher leadership skills reflects the standards that guide the program and current research in teacher leadership. This self-study will result in the production of a Synthesis Portfolio, a visual or graphic organizer, and a slide-show guided presentation of the graduate candidates' work and accomplishments during the time of their program studies in teacher leadership.

SELN 10576: Effective Inclusive Instruction 3 s.h.
This course is designed to begin developing the knowledge, skills, and dispositions necessary for general education teachers to understand and educate students in inclusive classrooms. Emphasis will be on: (a) understanding the legal foundations for inclusive instruction, (b) recognizing students' diverse strengths and needs, (c) designing, implementing, and assessing effectively differentiated lessons that feature research-based strategies, and (d) organizing and managing a flexible, student-centered classroom.

SELN 10577: Collaborative Instruction In Inclusive Classrooms 3 s.h.
Prerequisite: SPED 08555
This course will focus on instructional strategies in inclusive classrooms for students with and without disabilities. Collaborative and consultative skills for working with parents, regular education teachers, special education teachers, support personnel, and school administrators will be discussed and modeled, as well as role play for team teaching in such environments.

SELN 10578: Special Education Policy, Advocacy, and Teacher Leadership 3 s.h.
This course focuses on the federal and state policies and regulations guiding special education programming in P-12 public schools. Particular attention is given to the role of teacher leaders in advocating for appropriate service and placements for students with disabilities.

SELN 10580: Teaching Students With Moderate And Severe Disabilities 3 s.h.
Through this course students acquire knowledge of the curriculum, assessment procedures, and intervention strategies required to effectively teach individuals with moderate and severe disabilities. Among the areas of emphasis are functional academics, personal care, recreation/leisure, vocational and community living skills. Research-based best practice in instruction for students with moderate and severe disabilities is stressed.

SELN 10581: Implementing Positive Behavior Supports 3 s.h.
This course provides the student with a comprehensive study of the goals of misbehavior in classrooms and in other settings. Specific theoretical techniques and methodology in channeling deviant behavior through the use of behavior modification and other management techniques will be explored. Curricula content, self-development, attitudes, and research finding will enable each student to acquire effective skills in working with learning resistant and deviant behaving children and adults.

SELN 10582: Communication Skills For Students With Disabilities 3 s.h.
This course provides an intensive study of the language needs of students with moderate and severe disabilities and includes individual assessment for the identification of initial communication and the development of acceptable language procedures. Finger spelling, basic American Sign Language, and using technology to develop alternative communication strategies will be covered.

SELN 10585: Educational Assessment In Special Education 3 s.h.
Trends, practices, problems and issues in educational assessment will be examined. The course is designed to enable the special education teacher to administer criterion-referenced, informal, or standardized tests and to plan individualized educational programs for students with special needs. Curriculum-based assessment is emphasized.

SELN 10586: Emotional And Behavioral Support Strategies 3 s.h.
This graduate course will discuss positive strategies, related laws and regulations, and services to support students with behavioral and emotional problems. Social and emotional factors that affect behavior and learning will be explored. Emphasis will be placed on appropriate academic and social skills instruction, and pro-social interventions to meet the needs of students with difficulties in social and emotional adjustments.

SELN 10590: Introduction To Autism Spectrum Disorders 3 s.h.
This course is designed to provide graduate level instruction in the salient issues involved in the education of students with autism spectrum disorders (including autism, Rett syndrome and other pervasive developmental disorders). It provides an overview to candidates about the characteristics, language development, social relationship development, and instructional interventions for children with autism spectrum disorders.

SELN 10591: Instructional Methods For Students With Autism Spectrum Disorders 3 s.h.
Prerequisites: SELN 10590
This course is designed to provide graduate level instruction in the assessment and instruction of students with autism spectrum disorders. Students will learn about evidence-based practices for enhancing the academic, social, behavioral, and communication skills of students with autism spectrum disorders. They will apply their learning in both in-class case study activities and through classroom application. In addition to specialized practices, students will learn how to modify instruction in general education classes to meet the needs of students with autism spectrum disorders.

SELN 10592: Clinical Seminar In Special Education 1 s.h.
This seminar course is designed to be taken concurrently with the clinical field practice. Students meet throughout the semester to discuss teaching experiences, problem solving strategies, and their own reflections on working with children and youth with disabilities. A report on student progress monitoring are also completed. A written comprehensive examination will be completed during the course.

SELN 10593: Clinical Internship In Special Education 3 s.h.
This course will provide students an opportunity to apply research-based best practice in the field to teach children and youth with mild, moderate, or severe disabilities. Participants will be observed by both college supervisors and their mentor teachers, and will reflect on their instruction for improvement.

SELN 10600: Research Seminar In Special Education 3 s.h.
Students are expected to conduct an original research project. Guidance and assistance will be provided to help identify a problem, select appropriate research procedures, conduct a study, and write a comprehensive review of the results.

SELN 10601: RSRCH SEM IN SPCL ED 3 s.h.

SELN 10610: Inquiry in Special Education Settings 3 s.h.
Prerequisite: Matriculation in MA in Special Education
Students will learn about the research methods that form the basis for evidence-based practices in special education. They will study research methodologies and how they can be used to evaluate practice by reviewing recent research on the effectiveness of special education practices. Students will develop a proposal to evaluate the effectiveness of a practice used in a special education setting. (Taken at the end of the MA SPED program; take SELN 10610 and SELN 10611 in the same semester with the same instructor.)

SELN 10611: Practicum: Inquiry in Special Education Settings 3 s.h.
Prerequisite: Matriculation in MA in Special Education
Students will evaluate the effectiveness of a practice used in a special education setting and share the results with their school community. (Students take SELN 10610 and SELN 10611 in the same semester with the same instructor.)

SELN 60576: Inclusive Instruction in STEM Classrooms 3 s.h.
Prerequisite(s): B- or higher in: STEM 60501, READ 30520, STEM 60510Corequisite(s): STEM 60502 and STEM 60512
With a focus on STEM education for students with special needs, this course is designed to begin developing the knowledge, skills, and dispositions necessary for STEM teachers to understand and education students in inclusive classrooms. Emphasis will be on: (a) understanding the legal foundations for inclusive instruction, (b) recognizing students' diverse strengths and needs, (c) designing, implementing, and assessing effectively differentiated lessons that feature research-based strategies, and (d) organizing and managing a flexible, student-centered classroom.

SELN 60577: Effective Inclusive Instruction in English, Social Studies, Theatre, and World Language Classrooms 3 s.h.
In this course candidates will learn how to identify the learning difficulties of students with exceptional learning needs and assess, plan, and teach these students using evidence based practices that will enable candidates to succeed in subject matter content classes.

SMED 33502: Processes & Principles Of School Mathematics 3 s.h.
In this course, designed for certified teachers of secondary school mathematics, students will expand their pedagogical repertoires to include the mathematical processes of communicating,representing, making connections, problem solving, and reasoning and proving. The principles of curriculum, teaching, technology, equity,learning, and assessment will provide a framework for the study of the processes and students?current practice. These processes and principles will be studied entirely within the context of school mathematics content.

SMED 60500: Teaching Methods I: Subject Matter 3 s.h.
Prerequisites: ELEM 02511 and EDUC 01500; Corequisites: READ 30515
This course is the first of two subject-specific methods courses required for secondary candidates in the Master's of Science in Teaching program. MST Teacher candidates will learn to organize instructional materials into standards-based units and daily lessons appropriate for K-12 learners. This course focuses on learning theory, standards-based lesson and unit planning, pedagogy, classroom management, and learner diversity.

SMED 60501: Teaching Methods II: Subject Matter 3 s.h.
Prerequisites: SMED 60500 and READ 30515; Corequisites: EDUC 01601 and EDUC 01610 and SELN 42954
This course is the second of two subject-specific methods courses required for secondary candidates in the Master's of Science in Teaching program. Candidates will continue to learn ways to organize instructional materials into standards-based units and daily lessons approporiate for K-12 learners. In conjunction with a co-requisite Internship I experience, this course covers a range of topics necessary to building a learning community in secondary classrooms, such as learning theory, standards-based lesson and unit planning, pedagogy, classroom management, and learner diversity.

SPED 02340: Teaching Students with Autism Spectrum Disorder 3 s.h.
Prerequisite(s): SPED 08130 and SPED 08360
This undergraduate course focuses on the instruction and assessment of students with autism spectrum disorders. Students will learn about evidence-based practices for enhancing the academic, social, behavioral, and communication skills of P-16 learners with autism spectrum disorders. Students will apply this learning in both in-class study activities and across clinical experiences. In addition to specialized practices, students will learn how to modify instruction in general education classes to meet the needs of students with autism spectrum disorders.

SPED 08130: Disability as Diversity 3 s.h.
This general education course is designed to foster students' critical thinking about disability and ableism grounded in disability studies, critical pedagogy and social justice education. Students will examine social and cultural foundations of oppression, learn to disrupt ableism and to position themselves as agents of social change working to build inclusive communities.

SPED 08307: Assessment in Special and Inclusive Education 3 s.h.
Prerequisites: SPED 08130
This course emphasizes linking assessment with educational instruction in inclusive and special education. Prospective classroom teachers will learn how to routinely utilize formal and informal assessments to support all students in various inclusive settings. Teacher candidates will also have the opportunity to develop and demonstrate competencies related to assessment in conjunction with a required field experience component.

SPED 08308: Assistive Technology And Transition Planning 3 s.h.
Prerequisites: SPED 08130
This course focuses on exposing teacher candidates to a variety of accessible and assistive technologies. Students will gain hands-on skills in selecting and designing technology-based instructional materials for students with a wide range of instructional and communication needs. Teacher candidates will also explore transition planning across the educational continuum. Teacher candidates will also have the opportunity to develop and demonstrate competencies related to assistive technology and transition planning in conjunction with a required field experience component.

SPED 08316: Differentiated Instruction In The Inclusive Classroom 2 s.h.
Prerequisites: SPED 08130
This Junior Level (300) course will focus on how the diverse needs of individuals with educational disabilities/differences can be met within the general education classroom environment. Emphasis will be on developing communication/collaboration, instructional and assessment strategies that will assist the classroom teacher in diversifying instruction to meet individual needs. A field component is required.

SPED 08325: Pract Spec Ed I 4 s.h.

SPED 08326: Pract Spec Ed II 4 s.h.

SPED 08350: TOSD Clinical Experience I 1 s.h.
Corequisite(s): SPED 08360 and SPED 08307
This course serves as the field placement for SPED 08308 and SPED 08415. Students must complete the field requirements of those in a classroom that includes students with low incidence special needs.

SPED 08351: TOSD Clinical Experience II 1 s.h.
Corequisite(s): SPED 08308 and SPED 08415
This course serves as the field placement for SPED 08308 and SPED 08415. Students must complete the field requirements of those courses in a classroom that includes students with low incidence special needs.

SPED 08360: Positive Behavioral Support Systems 3 s.h.
Prerequisite: SPED 08130
This course exposes teacher candidates to a variety of theoretical approaches in behavior support of students. Students will develop an individual support plan and explore multi-tiered class-wide and school-wide behavior support systems to support all students. Teacher candidates will also have the opportunity to develop and demonstrate competencies related to positive behavior intervention supports in conjunction with a required field experience component.

SPED 08415: Specialized Instruction For Students With Exceptional Learning Needs 3 s.h.
Prerequisites: SPED 08130 and SPED 08316and SPED 08307
This senior-level course enhances the systematic progression of skills initiated during the earlier stages of the Teacher of Students with Disabilities Endorsement Program. The course prepares candidates to teach students with exceptional learning needs, covering instructional methods and strategies to teach self-help, motor, reading, math, language, study skills, science, and social studies. The course also emphasizes supporting students with exceptional learning needs in inclusive classrooms. There is a required field experience component with this course.

SPED 08445: Clinical Seminar in Specialized Education 1 to 2 s.h.
Prerequisites: SPED 08415
This course exposes teacher candidates to how to modify, adapt and supplement general education curricula for students with and without disability labels. Students will develop lesson plans and create cross-curricular modifications in order to create multiple access points for all students. Teacher candidates will also have the opportunity to develop and demonstrate competencies related to specialized instruction in conjunction with a required field experience component.

SPED 08450: Clinical Practice In Special Education 3 s.h.
Prerequisites: SPED 08415 or SPED 08416
This is the culminating field experience for candidates seeking a Teacher of Disabilities Endorsement. Clinical Practice provides candidates with full-time placement in a classroom setting that serves students with disability labels. Under university supervision and working with a collaborating teacher or mentor, candidates assume full responsibility for planning, teaching, and managing a classroom during this placement.

SPED 08515: Curriculum, Instruction, And Transition In Special Education 3 s.h.
This course will provide an overview of instructional strategies for teaching students with disabilities. It will focus on research-based best practices of instruction to students with disabilities in the areas of academics, social interactions, and transition from school to adulthood and employment. Training and education to prepare individuals with disabilities for successful community living will also be emphasized. Field-based assignments are required.

SPED 08520: Clinical Practice with Students with Disabilities 2 s.h.
This course provides the student with the opportunity to engage in a variety of field-based experiences with students with disabilities. Participants will be placed in self-contained, resource centers and inclusive settings to apply research-based best practices. (Apply via TK20 ~6 months in advance by set deadlines; taken concurrently with SELN 10592.)

SPED 08540: Technology For Students With Disabilities 3 s.h.
This course is designed to instruct educators on the effective implementation of accessible, assistive, and instructional technologies to support learners with disability labels. Students will explore concepts around assistive technology evaluation; accessibility-based technology to support inclusive practices; and assistive technologies to support academic success, communication, and independence. Students will also conduct an assistive technology evaluation and develop an implementation plan for an assistive device or tool based on individualized student needs.

SPED 08555: Education and Psychology of Students with Disabilities 3 s.h.
This course provides an in-depth study on how to support students with multiple and complex disability labels in P-12 settings who benefit from specialized social and educational programming. Course content will help students understand barriers to accessing inclusive education for students with visible and invisible disabilities, as well as the importance of identifying learners' strengths and support needs.

SPED 08595: INDEP STUDY-SP ED 1 to 6 s.h.

DA 01505: Data Analytics Capstone Practicum 3 s.h.
Prerequisite(s): Graduate standing or permission of the instructor.
This course provides a culminating experience for students graduating with an M.S. in Data Analytics. This course will reinforce ethical awareness and good decision making in health-related situations and discuss the specific professional and ethical responsibilities of the health data practitioner.

DA 01510: Data Analytics Laboratory I 1 s.h.
Prerequisite(s): Graduate standing or permission of the instructor.
This lab provides faculty guidance and supervision beyond the scope of existing courses. Students learn how to develop and structure their deliverables, as well as how to use data analytics tools in the context of real-world or research projects.

DA 01511: Data Analytics Laboratory II 1 s.h.
Prerequisite(s): Graduate standing or permission of the instructor.
This second lab provides additional faculty guidance and supervision beyond the scope of existing courses. Students learn how to develop and structure their deliverables, as well as how to use data analytics tools inthe context of real-world or research projects.

DA 03520: Healthcare Management 3 s.h.
Prerequisite(s): Graduate standing or permission of the instructor.
This course provides a comprehensive overview of the healthcare management field. Students will be introduced to organizational behavior theories as well as organizational behavior issues specific to the healthcare industry. Students will gain an understanding of the major functions, roles, and responsibilities of those working in healthcare management, including resource and technology management. Students will also gain an appreciation for the legal and ethical issues inherent in healthcare management.

DA 03650: Thesis I in Data Analytics 3 s.h.
In consultation with the instructor, students will identify and research a specific topic of interest in Data Analytics. Students will define a thesis project and develop a formal specification of their intended project for completion in Thesis II in Data Analytics under the supervision of Data Analytics faculty from either the Department of Mathematics or the Department of Computer Science.

DA 03651: Thesis II in Data Analytics 3 s.h.
Prerequisite: DA 03650
Students will follow their formal project specification developed in Thesis I in Data Analytics to research a specific topic area of Data Analytics and produce a written thesis under the supervision of Data Analytics faculty from either the Department of Mathematics or the Department of Computer Science.

DA 03652: Thesis III in Data Analytics 3 s.h.
Prerequisite: DA 03651
This is a continuation course for Thesis II in Data Analytics. The students in this course would either expand upon existing research projects from their earlier course or start newer projects which will be evaluated on an individual case-by-case basis and be under the supervision of Data Analytics faculty from either the Department of Mathematics or the Department of Computer Science. This course will serve as the capstone experience for the Masters in Data Analytics.

DI 68501: Introduction to Diversity & Inclusion 3 s.h.
This course will introduce students to the study of Diversity and Inclusion and the concepts of inclusion and exclusion through critically examining ascribed statuses, the roots and intractability of the exclusion of groups cast as subordinated, the concepts of privilege and disprivilege, and the different realities at the intersections of multiple minority group statuses. The course will prepare students to become change agents, able to contribute to the deinstitutionalizing of the "isms" in their educational, employment, and social network environments. This course will be offered annually, as a first semester requirement for incoming cohorts.

DI 68520: Topics in Diversity and Inclusion 3 s.h.
This course introduces students to an in-depth topic relevant to Diversity and Inclusion. The course will offer graduate-level work on a "special topic" that will vary from semester to semester. The content may come from a wide range of disciplines but will provide specific topics in specific content or on career building skills including, but not limited to topics related to diversity, equity, identity, cross-cultural communication, social psychology, or law.

DPEM 00101: Introduction to Emergency Management and Homeland Security 3 s.h.
This course presents comprehensive overview of the discipline of Emergency Management and Homeland Security. Attention to mitigation, preparedness, response, and recovery will be emphasized. An analysis of past disasters will be presented along with their impacts on policy formation leading up to the current FEMA all-hazards approach. The role, duties, and importance of the Emergency Management professional will be discussed throughout the semester. Moreover, a discussion of ethical issues and career options will be presented.

DPEM 00310: Critical Infrastructure in Emergency Management and Homeland Security 3 s.h.
Prerequisite(s): DPEM 00101
This course introduces students to the methods and approaches to protecting critical infrastructure as a means of effectively protecting people, physical entities and cyber systems and the establishment of an effective incident command operation. Moreover, students will examine vulnerability rise reduction strategies, contingency planning, and strategic partnership models as they are applied to the critical infrastructure sectors. Course topics include risk assessment and management, contingency planning, training and exercises, the role of the crisis management team, crisis communications, and public and private sector roles and relationships in emergency management.

DPEM 00400: Disaster Planning, Mitigation and Recovery 3 s.h.
The purpose of Disaster Planning, Mitigation and Recovery is to introduce the concepts and skills of hazard mitigation and recovery planning, vulnerability risk analysis, and implementation of a community-wide program disaster preparedness plan, and to relate them to hazard planning and mitigation processes of disaster planning. Students will design an exercise, identify the logistics necessary for execution and management of the exercise, and develop an exercise evaluation plan. The course instruction will follow and meet the guidelines established by the Federal Emergency Management Agency exercise design and evaluation courses and the Department of Homeland Security Exercise and Evaluation Program.

DPEM 00410: Public Leadership in Crisis Management & Communications 3 s.h.
This course provides an overview of political and organizational leadership in crisis situations by addressing prevention of potential crises, mitigation of those that do occur, and recovery and restoration in the wake of a crisis. Students learn why effective crisis preparation and response are crucial, how to handle internal and external communications, and which leadership qualities are essential for effectively managing a crisis.

HGS 70507: Introduction to Holocaust and Genocide Education 3 s.h.
This course provides students with the fundamental content knowledge and skills they need to teach Holocaust and Genocide education, broadly situated. Intended for teachers and those working in public history and engaging in anti-bias education in other institutions, this course will focus on learning the history of the Holocaust and genocides, pedagogies and interdisciplinary methodologies for teaching these difficult histories.

HGS 70527: Colloquium in Holocaust and Genocide Studies 3 s.h.
This course introduces students to an in-depth topic relevant to the Holocaust and Genocide. The course will offer graduate-level work on a "special topic" that will vary from semester to semester. The content may come from a wide range of disciplines but will provide specific topics in specific content or on career building skills including, but not limited to topics related to the Holocaust, genocide, museum studies, or education.

HGS 70537: Holocaust and Genocide Education Program Evaluation and Creation 3 s.h.
Prerequisite: HGS 70507
This course provides students with the knowledge and skills they need in order to, first, evaluate existing curricula and programming being used to teach about the Holocaust and other genocides. These include textbooks, but also courses of study offered by non-profits, films, literature, and museum sites. Students will then create a course of study about the Holocaust or another genocide grounded in content, based on best practices, and dependent on constructivist pedagogies.

HGS 70577: Student Assessment in Holocaust and Genocide Education 3 s.h.
Student assessment and evaluation is an integral part of the teaching and learning process. Teachers are required to use diverse forms of assessment, for example, to support and communicate progress in learning to students, parents, and administrators. This course will build on current assessment practices and support students in exploring ways to enhance assessment directly related to the Holocaust and Genocide.

HGS 70597: Capstone in Holocaust and Genocide Education 3 s.h.
This final course of the MA in Holocaust and Genocide Education Studies asks students to conduct research in order to both produce an applied capstone research project and to show the ways in which this research can be applied to an educational setting. This applied research might take the form of a classroom curriculum, a museum exhibit, or a program of education for an NGO (among others).

INTR 01451: Issues in Business: Directed Research 3 s.h.
Prerequisites: COMP 01111 AND COMP 01112 AND BUS 01101
An upper-division course for students in the Liberal Studies: Humanities and Social Sciences, Sequence B Perspectives in Business, Issues in Business: Directed Research is a course that focuses on the current issues and trends in business as found in the business media. Through this class, students are able to examine the relationship business trends relate with their other areas of study. As a writing intensive (WI) course, the course is designed to allow students to explore areas of personal interest through the collection of research and the presentation of such material in written and spoken formats.

INTR 01488: Career Planning And Development 2 to 3 s.h.
This course will provide students with multifaceted experiences in career planning and development. Students will engage in self-assessment, career exploration, job search strategies and decision making.

INTR 01499: Bachelor Of General Studies Portfolio 1 s.h.
This course is limited to students enrolled in the General Studies Program.
This course is the portfolio component required for all students in the Bachelor of General Studies Program. Students will analyze their academic progress through self-reflective assessment.

INTR 01503: Seminar On Integrating Mathematics And Science 3 s.h.
This interdisciplinary seminar is designed for advanced graduate students with some background in teaching mathematics and/or the sciences at the elementary and/or middle school level. Students in the course will examine a number of current scientific issues from the perspective of different sciences and develop and pilot instructional activities relating to those issues.

INTR 11511: Urban Teacher Residency 0 s.h.

SE 01501: Sustainable Engineering Fundamentals 3 s.h.
Sustainable Engineering incorporates development and implementation of products, processes, and systems that meet technical and cost objectives while protecting human health and welfare and elevating the protection of the biosphere as a criterion in engineering solutions. This course will introduce the role of engineers in sustainability and provide tools to measure sustainable systems.

SE 01502: Life Cycle Assessment 3 s.h.
This course will introduce students to the fundamental principles of Life Cycle Assessment. Students will apply the ISO 14000 standard methodology to perform a life cycle assessment of a product or process. Students will perform assessments using process-based analysis models, input-output and hybrid approaches of life cycle assessments. Critical Assessments of published life cycle assessments will be conducted. Extensive use of life cycle assessment software will be required for this course. Software programs will be used extensively in this course.

SE 01503: Environmental Policy 3 s.h.
This course is an introduction to the history, organization, goals, and ideals of environmental policy in America. It examines the shift in emphasis from nature protection to pollution control to sustainability over the twentieth century and develops critical tools to analyze changing conceptions of nature and the role of science in environmental policy formulation. Of central interest is the relationship between knowledge, uncertainty, and political or legal action. Theoretical approaches are combined with case studies of major episodes and controversies in environmental protection.

SE 01504: Environmental Management 3 s.h.
This course deals with integrated environmental management issues and methodologies with a global perspective. Topics include environmental decision-making from a socio-economic and environmental standpoint, environmental data collection, analysis, and management techniques for environmental assessment and feasibility case studies. The course is intended to give students an understanding of current environmental issues and tools for analysis of data for environmental management. The issues are examined from the worldwide perspectives of science, engineering, business and society. The course will culminate in an original research project and presentation.

SE 01505: Sustainable Energy 3 s.h.
Sustainable Energy is an introduction to the characteristics of a sustainable source of energy. Numerous energy sources will be investigated to determine their role in a sustainable future. Technologies such as solar, wind, biomass, geothermal, hydropower and other emerging technologies will be studied. A fundamental concept of the course is that a sustainable energy source must be technically feasible, economically viable, protect human health and welfare, as well as protect teh biosphere.

JRN 02210: Journalistic Writing 3 s.h.
Prerequisites: COMP 01112
This course provides an introduction to a wide variety of news writing forms. Students learn how to cover events, conduct interviews, and write with effective journalistic structure and style.

JRN 02313: Magazine Article Writing 3 s.h.
Prerequisite(s): JRN 02310 or JRN 02210 or PR 06301 or WA 01300 with a grade of C- or better
Students get started as freelance magazine article writers by conceiving article ideas, interviewing, researching, and writing. The course provides instruction in adjusting style and slant to reach potential readers. Students learn to sharpen writing, resolve clarity problems, and add vigor to writing. The course analyzes freelance markets. Students submit work for publication.

JRN 02314: Photojournalism 3 s.h.
Prerequisites: 45 credits required
This course covers the practices and techniques used by photojournalists on modern American newspapers. Students take digital photographs and edit in Photoshop. Weekly laboratory assignments are required.

JRN 02319: Media Ethics 3 s.h.
Prerequisite(s): JRN 02205 or RTF 03295 or PR 06301
Media Ethics examines decision-making in media professions. The course examines the moral aspects of media conduct, and helps the student develop a more complete understanding of not only the historical background of ethics, but how the interplay of politics, science, economics, law, philosophy, and other disciplines have influenced the way we view right and wrong. The course also strengthens analytical skills as they relate to ethical decisions, cultivating a perception of how media professionals come to a decision and the many factors that influence that decision.

JRN 02321: Digital Journalism I 3 s.h.
Prerequisite(s): JRN 02205 or RTF 03295 or PR 06301
This course provides an introduction to the digital news landscape. Students perform original reporting and a series of writing, photo, audio, video and social media news assignments.

JRN 02332: The Publishing Industry 3 s.h.
Prerequisites: 75 credits required
The Publishing Industry examines the business and practice of publishing through broad readings and research related to industry operations and trends, field trips, guest speakers, interactive projects, and directed discussion. Students explore publishing aspects of books, magazines, newspapers, online material, blogging, podcasting, self-publishing, and editing. When students complete this course, they will have a better idea of the career path they would like to pursue.

JRN 02335: Media Law 3 s.h.
Prerequisites: 45 credits required
This course examines laws that deal with the legal responsibilities of print, broadcast, online and film media as well as public relations and advertising practitioners. Students analyze topics such as libel, privacy, broadcast regulations, and copyright.

MAWR 02510: Writing For Broadcast 3 s.h.
This course teaches students how to write scripts and script segments for radio, TV and documentary film. Exercises include use of broadcast style, writing for audio and video, dialogue, narrative, attribution, and structure. The goals of this class are to expose students to techniques common in all news and documentary writing and to integrate the use of cameras and microphones with the spoken word.

RTF 10528: Episodic Screenwriting II: Writing the Pilot 3 s.h.
Prerequisite(s): RTF 10527
This graduate-level writing workshop course explores the form of episodic screenwriting, specifically serialized narrative programs. Students analyze a variety of episodic content; expand the "show bible," a document created in Graduate Episodic Screenwriting 1 that maps a series and provides a clear sense of its characters, tone, structure and narrative trajectory, with more in-depth episode breakdowns; revise the visual pitch presentation created in Graduate Episodic Screenwriting 1; and write and revise a complete hour-long pilot script or two half-hour episode scripts.

BLED 40505: Issues And Innovations In Foreign Language Education 3 s.h.
This course is designed for educators responsible for planning and supervising the foreign language curriculum K-12. The course deals with the issues of sequential curriculum development in foreign languages in keeping with state and national standards. Emphasis is placed on innovations resulting from implications of research in second language acquisition, the interrelationship of language and culture and models for foreign language curriculum development. Topics include modes of communication, aspects of culture, scope and sequence of content, and curriculum evaluation.

BLED 40510: Issues Of Language And Cultural Diversity In ESL/Bilingual Programs 3 s.h.
This course focuses on foundational theories and areas of research related to the field of TESOL and bilingual education. Special emphasis is placed on the forces affecting students and policies related to second language schooling in state, national and international contexts. Students will develop a reflective philosophy for educating English Language learners.

BLED 40512: Linguistics And Second Language Acquisition For Teaching Languages 3 s.h.
This course addresses basic concepts of linguistic theory and second language acquisition research. Students will compare and contrast second language acquisition pradigms and investigate their applicability to the classroom. Discussion will also focus on components of the language system in the context of second language teaching.

BLED 40515: Understanding Immigrant-Origin Students: Language, Culture, and Mobility 3 s.h.
In this course, students examine the experiences and identities of immigrant-origin and emergent bilingual students, focusing on language, culture, immigration, and transnationalism. Special issues related to socioeconomic status, race, religion, disability, gender, and forms of discrimination that immigrant-origin students encounter are addressed. Students also examine advocacy issues and ways to support partnerships with families and communities.

BLED 40517: Modern Developments In ESL/Bilingual Education 3 s.h.
This course examines the implications of current theoretical positions regarding second language acquisition for program development and instruction. The course deals with a range of methodologies, the selection of content, instructional techniques, the selection and use of materials, and the development of alternative assessment measures.

BLED 40520: Planning, Teaching, And Assessment In ESL Classrooms 3 s.h.
This course concentrates on how teachers plan, teach, and assess in ESL classes. Students will create unit plans that incorporate both language and content area objectives and learn a variety of research-based instructional methods to support language acquisition and student learning.

BLED 40521: Teaching Bilingual/Bicultural Education: Process And Practice 3 s.h.
The course examines current programs and available materials in bilingual education appropriate to a range of content areas and grade levels. Microteaching and peer coaching are practiced to provide a basis for reflective teaching. The course is open to candidates who possess or are eligible for a standard or provisional New Jersey instructional certificate. State-approved examinations in oral and written English and the target language are required for certification.

BLED 40522: Integrating Language And Content In The ESL/Bilingual Education Classroom 3 s.h.
This course examines the theory and practice of integrating language and content in K-12 ESL, bilingual and content-area classrooms. Specific focus is given to methods pertaining to implementing sheltered instruction modles, content-based ESL, students' proficiency levels, proficiency testing, and strategies for collaborating with other teachers and school leaders.

BLED 40523: Practicum In Teaching English As A Second Language 1 s.h.
Corequisite: BLED 40520
This course is offered as a co-requisite to Teaching ESL: Process and Practice (BLED 40.520). The course will consist of a field experience in teaching English as a Second Language (ESL) and an accompanying class that focuses on reflective evaluation of that field experience. Candidates currently teaching English language learners will use their own classes for the field experience. Candidates not currently teaching English language learners will be assisted in placement for the field experience.

BLED 40524: Clinical Internship In English As A Second Language 6 s.h.
Prerequisites: BLED 40510 AND BLED 40512 ANDBLED 40515 AND BLED 40520 AND BLED 40523AND BLED 40522 (40522 may be taken concurrently)
This field-based course provides the teacher education candidate with opportunities to demonstrate the subject content, professional knowledge, pedagogical skills, and dispositions that are developed in program course work. The Clinical Internship experience is a supervised, full-time activity conducted in a public elementary, middle or high school ESL classroom. Successful completion of the Internship requires demonstrated mastery of subject area content, lesson planning, and multiple instructional strategies to meet varied student needs; demonstrated ability to assess learner progress and modify instruction accordingly, ability to manage all aspects of classroom activity, ability to work collaboratively with all instructional, administrative, parental, and community members of the classroom and school community, and ability to document evidence of doing all of the above. Admission to this course requires completion of all previous Teaching ESL coursework, including a minimum program grade point average of 3.0.

CASE 90512: Examining Intersectionality in Critical Theories of Race, Class, Gender, Sexuality and Citizenship 3 s.h.
This course provides an overview of intersectionality and selected theoretical lineages which intersectionality often draws from including feminism, critical theory, critical race theory, ethnic studies, queer studies, nationalism, and de/post-colonialism. Beyond studying and summarizing relevant work, the course challenges students to critically synthesize and apply these frameworks to the study of urban education and communities.

CASE 90513: History of Urban Education and Communities 3 s.h.
This course surveys the varied relationship of urban education and communities within the broader history of the rise of urban cities. In doing so, the course critically examines the history of urban communities and schools through various analytic frameworks attending to concepts of space, race, class, culture, language, and citizenship, as well as how these theories have been taken up in the analysis of urban education and communities. The course focuses on the intersection of urban social movements, communities, policies, and practices as related to public schooling the United States.

CASE 90514: Education Reform in the US: Theories of Change 3 s.h.
This course will engage students in a critical conversation guiding the work of education reform in the United States. The content will center on the complexity of the myriad systems that impact educational opportunities and outcomes, from economic policy to employment, housing to transportation, parenting to early education, access to healthcare and healthy choices, criminal activity and neighborhood safety, exposure to violence and environmental toxins. Students will explore the complexity of changing individual behavior and social systems, by examining the interactions between all of the forces at play in urban environments.

CASE 90519: Urban Inquiry and Social Justice Research Methods 3 s.h.
In this methods course, students begin by exploring researcher positionality to understand how epistemological assumptions influence how and the extent to which researchers are able to conduct quality studies. By drawing on various works, such as common typologies of cross-cultural researchers (Banks), epistemological racism in research, (Scheurich and Young), and various unseen, and unforeseen dangers in conducting research in racially and culturally diverse settings (Milner), students are encouraged to recognize the importance of researchers' roles in advancing social justice through sound research. Accordingly, students investigate different modes of inquiry, not to choose one way of "doing" research but to understand how methods can complement each other given the appropriate lens and approach. Within each of these modes of inquiry, students examine how data (e.g. observations, interviews, field notes, documents, artifacts, and various large data sets) can work for or against social justice.

CASE 90524: Capstone Thesis Project 3 s.h.
This course serves as the final project for students in the Urban Education and Community Studies MA. Students will be required to choose a research question, develop a study, collect and analyze data, write and defend a research thesis paper. The topic of the research study will be chosen and developed in consultation with a faculty advisor.

CASE 90531: Critical Consciousness: Sharing Power and Voice with Students 3 s.h.
Students will learn to use dialogic instructional strategies to create student-teacher partnerships that respect student voice and affirm the lived experiences of students. Participants will learn strategies to engage students and themselves in critical inquiry about identify, privilege, and social justice, and to share power and voice in their classrooms.

CASE 90532: Working with Families and Communities 3 s.h.
This course will help teachers to develop a robust, critical, and theory-based understanding of the interaction of families and schools. Students will also learn to work collaboratively within their schools to equitably and purposefully engage with the families of their students and the communities surrounding their schools. By the end of this course, students will develop a set of research questions and vignettes for a community-based participatory research project. Students will identify and closely examine several models of family and community engagement in schools, connecting these models with current school and classroom practices of engaging with families and communities. Students also will engage in coursework toward two products: 1) a conceptual framework for interacting with families as education professionals, and 2) analysis and reconstruction of a school-based family and community event.

CASE 90533: Critical Pedagogy 3 s.h.
The theoretical framework for this course builds upon conceptualizations of critical pedagogy that supports educators to challenge traditional beliefs about the ways that school works. This requires a commitment to the construction of knowledge by sharing power and authority between students and teachers, challenging the hegemonic or "common sense" notions of what school is and should be, and sharing control of the curriculum and pedagogy of the classroom.

CASE 90540: Urban Education Policy and Reform 3 s.h.
Urban educational leaders need to be able to explore the past to see how knowledge was perceived, valued, transmitted, received, and validated within educational institutions, and the dynamics that drove changes over time. In this course, students will be required to critically analyze an educational policy issue uncovering the context (history, research, politics), determining how the policy was implemented and what the outcomes were, intended as well as unintended.

CASE 90541: Leadership for Social Justice and Educational Equity 3 s.h.
In this course, students will develop a deeper understanding of leadership, including our own personal philosophy of leadership. We build this as we seek to understand our own experiences and the experiences of historically marginalized groups of the extended school community along with the historical, philosophical, and political forces that have led to inequities. By critically analyzing current conditions, we can use our role as leaders to develop policies, curriculum and relationships to create access and opportunities for children, teachers and families fully participate and succeed as learners/citizens in formal and informal educational communities.

CASE 90542: Engaging in Education and Community 3 s.h.
This course will look at the theoretical foundations and critical issues of advocacy, elements of advocacy planning, and strategies for action. Students will deepen their understanding of advocacy tools, processes and models to utilize advocacy in practice. A primary focus will be on the connection of community organizations and schools, with a focus on developing inclusive, collaborative processes that include a variety of stakeholders and engage a range of strategies. Students will review methods that include leveraging political processes, developing social media campaigns, and developing policy proposals.

CASE 90550: Urban Education & Community Studies Special Topics 1 to 3 s.h.
This course responds to the emerging challenges and opportunities created by the shifting education policy landscape, and so will capitalize on current events and shifts in legislation and policy that impact work in urban educational settings.

CASE 90551: Artistic Expression in Action: Building Stronger Communities Through Fine Arts Outreach 3 s.h.
This course is designed to help teachers and/or community leaders learn how to develop and implement responsive, collaborative, and culturally relevant arts activities capable of being integrated in various culturally and linguistically diverse settings for the purposes of providing outreach and enrichment. Further, students will examine, create, and experience specific artistic media that have been used for the purposes of awareness, outreach, and enrichment in hopes of understanding arts aesthetic and social value.

CASE 90710: Power & Privilege: The Social Construction of Difference 3 s.h.
This course is situated within a framework of sociopolitical development, informed by a range of critical theoretical perspectives, and advanced by an understanding of the nature of both individual and systemic change. Student will explore how institutions, social systems and individual experiences create and sustain systems of power and privilege that ensure access for some while excluding others. Students will begin to develop a critical understanding of the cultural, political, economic, and the institutional forces that perpetuate systems of privilege and oppression, and to develop a critical consciousness, reflective practice, and commitment to action in relation to the policy, curriculum, pedagogy, and practices they employ.

EDUC 01270: Creating Supportive Middle & High School Learning Environments 3 s.h.
Prerequisite(s): SMED 40450
This course will enable Subject Matter Education (SME) teacher candidates to gain an understanding of the effect of the learning environment on student achievement. Candidates will learn strategies for creating and maintaining a positive learning environment in which all learners can achieve their potential. The course will focus on student-centered instruction that promotes civil discourse and strategies to address no-engagement. Clinical (field) experiences will provide the opportunity for teacher candidates to begin to make the connection between the content of the course and its application in secondary SME classrooms.

EDUC 01272: Teaching Content in Diverse Classrooms 3 s.h.
Prerequisite(s): SMED 40450
This course will enable Subject Matter Education (SME) candidates to gain a multifaceted understanding of the individual and institutional elements that impact student achievement and schooling experiences. Candidates will then learn about specific approaches and instructional practices that they can use in the classroom to promote learning for culturally and linguistically diverse students, including teaching academic language, differentiating instruction and assessments, and supporting home, community, and school partnerships.

FNDS 21150: History Of American Education 3 s.h.
This course provides an in-depth study of American education from 1600 to the present, covering preschool through post-secondary education. It focuses on the social forces, sources of conflict, major educational figures and patterns of schooling during each period. In addition, the course will highlight the ways in which diversity has been accommodated, marginalized, or rejected in American education. Students will be able to identify and discuss ways in which diversity has been accommodated, marginalized, or rejected in American education.

LIBR 01502: Survey Of Children's Literature 3 s.h.
The course surveys literature for children from birth to age 14, including genre study, major authors and illustrators, current trends in publishing, issues in criticism, electronic resources related to children's literature, methods of promoting reading, teaching children's literature to children, and using multicultural children's literature in classrooms and libraries.

LIBR 01503: Survey Of Young Adult Literature 3 s.h.
Students will consider the reading and media interests of young people ages 12-18 in view of current information about adolescence in the United States. Topics covered include major genres, authors, literary qualities, criticism and reviewing, awards, selection principles, censorship, and promotional techniques for classrooms and libraries.

LIBR 01505: Reference Resources And Services I 3 s.h.
Students focus on the provision of reference services as well as the evaluation and use of reference sources in schools and libraries. Topics covered include characteristics and use of information sources and systems, policies and procedures, basic reference sources in both print and electronic formats, and skills and attitudes needed to assist diverse individuals in meeting their information needs.

LIBR 01506: Foundations Of Librarianship 3 s.h.
This course introduces the field of librarianship and is the first course students should take in the program. Includes: the roles of libraries and librarians in society, the history of libraries and communications, models of library service, professional ethics, and contemporary issues in school and public libraries.

LIBR 01507: Managing Library Programs 3 s.h.
The management of school and public library services is the focus of this course. Students learn and apply principles of library organization, personnel administration, budgeting and finance, facilities and equipment, public relations, policies and procedures, accountability and evaluation.

LIBR 01510: Library Collections And Resources 3 s.h.
The course focus is on issues, practices, and policies in the selection of print, nonprint, and electronic resources in school and public libraries. Emphases include: intellectual freedom, effective communication through policies, technology applications, bibliographic aids and review practices, and collection evaluation and maintenance.

LIBR 01511: Organization Of Library Resources 3 s.h.
The course studies the library's responsibility to provide physical and intellectual access to print, nonprint, and electronic resources. Topics include: cataloging and classifying resources according to national standards; use of current technology resources; evaluating commercial and network sources; and understanding of theories and issues related to the organization of knowledge.

LIBR 01516: School Media Centers For Teaching And Learning 3 s.h.
Focus is on the relationship of the library media program to the school curriculum with emphasis on library/media, information, and computer skills in the pre-K-12 instructional program. Students observe library media services in school settings.

LIBR 01521: Design And Production Of Educational Media 3 s.h.
Focus is on new and emerging electronic technologies in libraries and media centers. Students use a variety of software to create such products as databases, library web pages, spreadsheets, presentations, and curriculum and public relations products. The course includes video technology, Internet searching, copyright and equity issues, and reflective writing.

LIBR 01530: Library Technology 3 s.h.
Focuses on planning for school and library technology, funding for technology, system selection, and current issues in school and library media technology. Study of the role of the library staff in the creation of information and its flow to users.

LIBR 01570: Selected Topics In Librarianship 1 to 6 s.h.
Designed for in-service school media specialists and public librarians, this course focuses on specific topics or issues affecting the profession and permits students to explore emerging thinking in the field. Topics vary each time the course is taught.

LIBR 01580: Practicum In Library Services 1 to 3 s.h.
Focus is on observation and participation in important aspects of library operations, including selection and organization of materials; reference and bibliographic services; curriculum development; and techniques of teaching library media use. This course must be pursued at an approved site under the supervision of an appropriately certified school or public librarian and a college supervisor.

LIBR 01601: Graduate Thesis In Library Services II 3 s.h.
Completion of the research project selected in Graduate Thesis in Library Services I.

READ 30120: Literacies In Today's World 3 s.h.
This course will provide students with historical and cultural perspective of how and why people acquire and use literacy to meet personal and societal needs. By viewing literacy through different lenses students will acquire an understanding of the interrelationship of language, thought, and social practice.

READ 30280: Teaching Literacy 3 s.h.
A basic understanding of the reading process and its relationship to the other language arts is the focus of this course. Topics pertaining to reading/writing instruction in grades K-12, ranging from emergent literacy to comprehension of narrative and expository discourse are covered. There is an emphasis on strategies for developing phonemic awareness, word recognition skills, fluency, vocabulary, and comprehension through various instructional settings and across all curricular areas. The importance of literature-enrichment activities and making curricular connections is highlighted. Field component is required.

READ 30311: Literacy Pedagogy I 3 s.h.
This course explores the broadening nature of literacy and literacy instruction in the 21st century. The course addresses both the theory and pedagogy of literacy instruction. Topics range from emergent literacy to comprehension of narrative and expository discourse and address reading and writing instruction that engages students in the K-5 classroom. This course has a particular focus on designing literacy instruction for culturally and linguistically diverse students that positions the literacy teacher as a reflective practitioner with a focus on teaching for social justice.

READ 30319: Teaching Reading And Writing In The Content Area 3 s.h.
This course helps students integrate reading and writing methods and strategies into subject matter instruction in grades K-12 ranging from emergent literacy to comprehension of narrative and expository text. There is an emphasis on strategies for developing phonemic awareness, word recognition skills, fluency, vocabulary, and comprehension through various instructional settings as well as integrating writing to learn strategies. Students acquire understanding for assessing pupil abilities, selecting suitable materials and fostering language, comprehension, and study skills needed for mastery of academic subjects. The importance of literature-enrichment acitivities and making curricular connections is highlighted.

READ 30320: Language Development, Emergent Literacy, And Reading In Young Children 4 s.h.
Corequisites: ECED 23320 OR INCL 02210
Students will gain an understanding of five phases of Literacy: Awareness and Exploration; Experimental Reading and Writing; Early Reading and Writing; Transitional Reading and Writing; Independent Reading and Writing. Students will learn how to integrate literacy across all curricula in the forms of reading, writing speaking, listening, and viewing. They will be able to identify, assess, adapt and implement a variety of strategies that take into account children with special needs. Further, students will be able to recognize the impact of cultural, linguistic, and other diversities that affect engagement in literacy learning and they will be able to identify and utilize effective teaching strategies that address these differences. This course also requires a weekly field experience in a pre-school setting.

READ 30347: Phonics And Spelling Instruction 3 s.h.
Prerequisites: READ 30280 or REED 30280 or READ 30311 or READ 30320
This course prepares prospective teachers to blend evidence-based phonemic awareness, phonics, word identification, and spelling instruction strategically into an integrated language arts approach to teaching literacy. Major topics include the development of children's phonic/spelling knowledge; what teachers should know about language; informal techniques to assess children's early literacy, word identification, and spelling understandings; systematic and meaningfully applied instruction to meet development, cultural, and linguistic differences; and communicating with parents and professionals about phonics and/or spelling.

READ 30350: Using Children's Literature In The Reading/Writing Classroom 3 s.h.
Prerequisites: REED 30280, READ 30280, READ 30311 or READ 30320
This course prepares prospective teachers to integrate reading and writing in a language arts program through the use of book selections that reflect quality writing in the genres typically found in children's literature. The course will provide students with sufficient background and knowledge in children's literature so that they may teach reading by using trade books, emphasizing process writing and developing thematic units. Language, literacy, and learning will be enhanced by integrating children's literature across the curriculum.

READ 30351: Literacy Pedagogy II 2 s.h.
Prerequisite: READ 30280
This course prepares teacher candidates to provide differentiated literacy instruction in diverse classrooms with a wide range of developmental levels, instructional needs, interests, and backgrounds. Teacher candidates will learn how to select, administer, and analyze various assessment tools to inform instruction. Field experience is required.

READ 30421: School Reading Problems-Writing Intensive 3 s.h.
Prerequisites: COMP 01112 and READ 30347
In this course, students learn to teach struggling readers by applying their knowledge of literacy instruction learned in prerequisite coursework. They use assessments and observations to identify students' reading levels. Students are required to use on-going diagnostic teaching techniques to plan, teach, and adjust instruction according to the needs and interests of struggling learners. Process writing is used throughout. As a course requirement, students work in the Rowan Reading Clinic. Students tutor a K-12 student for 20 hours and write a final report.

READ 30451: Supervised Clinical Practice In Reading 3 s.h.
Prerequisites: READ 30421 or READ 30350
Students in this course apply diagnostic, reflective teaching procedures in order to teach struggling readers in a clinical setting. They select materials and instructional strategies that meet the specific needs of the child. Emphasis is placed on on-going, diagnostic teaching that integrates the language arts in instruction that adjusts to the needs and interests of struggling readers. Students will conduct informal reading assessments at the end of the clinic session in order to write a formal report that includes assessment data; students' strengths and needs; and recommendations to parents, classroom teachers, and future tutors for further instruction.

READ 30500: Theory and Practice in Literacy Education 3 s.h.
Prerequisite(s): READ 30515 and READ 30520
This course will examine influential theories and research that address the developmental, cognitive, motivational, literary, linguistic, sociocultural and sociopolitical foundations of reading. The course considers how leading and often competing reading theories developed over time and how seminal research has influenced scholars, practitioners and policy makers. In addition, there is emphasis on research shaping current conversations in the literacy field in which the definitions, purposes and practices of reading depend on reader characteristics (e.g., English Language Learners, economic class and gender), text factors (e.g., print vs. electronic, magazines vs. literature), and contextual considerations (e.g., in-school vs. out of school settings, local vs. federal reading policy).

READ 30510: Teaching Elementary Reading 3 s.h.

READ 30515: Teaching Reading And Writing Across The Grades 3 s.h.
Students acquire a background in current theory and practices related to emerging literacy, word identification, fluency, comprehension, study skills, and recreational reading in grades K-12. The relationships between reading and the other language arts and between reading and other subject areas are addressed. Additionally, students become familiar with various methods, materials and technology used in teaching reading, assessing reading performance, and organizing and managing a reading program in the K-12 classroom. This course is required for those seeking the M.A. in reading education and/or reading specialist certification. Teachers and administrators who wish to increase their knowledge in the K-12 reading curriculum and instruction may also enroll.

READ 30520: Content Area Literacy 3 s.h.
This course is designed for reading and non-reading majors interested in increasing knowledge and skills in teaching reading in the content areas. It is a required course for those seeking an M.A. in reading. Instruction is provided in the developmental aspects of reading with little emphasis on corrective or remedial practices. The content of the course may be oriented toward the subject matter areas represented by the students enrolled in the course. Special emphasis is also given to developing vocabulary, comprehension, and study skills as well as to assessing pupil ability to read content material and to select suitable materials for instruction.

READ 30530: Teaching Reading to Students with Disabilities 3 s.h.
The primary purpose of the course is to present the philosophy of teaching reading to exceptional children along with the appropriate methods and materials. Major topics include the nature and needs of children who deviate from normal assessment of reading ability, emerging literacy, the role of parents and the child study team, intervention strategies, settings for instruction, word recognition, comprehension and study skill techniques appropriate for exceptional learners, adaptations of methods and materials, and organizational patterns. This course may not be offered annually.

READ 30535: Word Study: Phonics, Spelling, And Vocabulary Instruction 3 s.h.
This course develops understandings for teaching phonics, spelling, and vocabulary in integrated language arts classrooms. The importance of knowing what to teach and when is emphasized. Major topics include: the development of word knowledge from emergent literacy to adulthood, strategies for instruction, the role of assessment, and parental involvement.

READ 30540: Administration And Supervision Of School Reading Programs 3 s.h.
Prerequisite(s): READ 30515 and READ 30520 andREAD 30545
The purpose of this course is to examine the role of the reading specialist in planning, developing, supervising, and evaluating reading programs at all levels. Major topics include reading program budget planning, components of an overall reading program, subsystems, special provisions, evaluating teacher performance, planning and conducting in-service workshops, organizational patterns, planning and preparing district materials, and selection and evaluation of commercial materials.

READ 30545: Using Multicultural Literature In The K-12 Reading And Writing Classroom 3 s.h.
This course will focus on reading and actively engaging with a wide variety of multicultural texts for children and adolescents. Multicultural literature will be broadly defined to include an examination of difference that looks closely at those traditionally absent or marginalized in texts for young readers. Course readings will emphasize issues of selection versus censorship and the ability of multicultural literature to provide enjoyment while allowing for the development of cultural awareness/sensitivity.

READ 30547: Teaching Literacy to English Language Learners 3 s.h.
This course with strong research base and specific instructional strategies, covers the essential topics of first and second language axcquisition, oral language development, writing, reading, vocabulary, and reading and writing across the curriculum. Educators need to understand K-12 English language learners' literacy and language acquisition as well as instructional practices, approaches, and methods that address different cultural and linguistic backgrounds.

READ 30550: Diagnosis Of Remedial Reading Problems 3 s.h.
Prerequisite(s): READ 30540 and READ 30535 andREAD 30530; Corequisite: READ 30560
Students in this course will become aware of the factors which influence reading achievement. They will learn to administer standardized and informal tests to individuals as well as to small groups. Furthermore, they will recognize the need to modify some procedures for exceptional learners. Throughout the course, the importance of on-going assessment will be emphasized. Finally, strategies for interpreting and reporting test results will be delineated. As a course requirement, students will administer selected tests to a student and summarize the results in a report.

READ 30552: Selected Topics In Reading 3 s.h.
Such areas as the following are explored: methods and materials for teaching reading and determining reading levels; influencing factors in reading disability; and differences in teaching varied types of children. Demonstrations, hands-on experiences and group work are involved. May not be offered annually.

READ 30557: 21st Century Literacies in Today's Schools 3 s.h.
Prerequisite(s): READ 30500 and READ 30545 and READ 30535 and READ 30530 and READ 30611 and READ 30552 and READ 30547
This course addresses newly defined literacies in the technological world. Candidates will examine a range of theoretical, methodological and practical approaches to indentifying and understanding new literacies. They will understand that the demands of 21st-century literacy are more complex and more challenging that earlier periods in history. The course has as its focus communication and collaboration both within and outside the course and across various platforms (e.g., blogs, word press, twitter). Candidates first actively engage in using digital tools themselves, ultimately exploring possibilities with their students in their individual contexts.

READ 30560: Corrections Of Remedial Reading Problems 3 s.h.
Corerequisite: READ 30550 with minimum grade of B
Students in this course become aware of factors that are considered when planning instruction for readers experiencing difficulty. In planning lessons students design and adapt instructional materials, develop computer-based teaching strategies, and implement instructional procedures in an integrated language arts perspective. The course instructor supervises students as they use diagnostic teaching strategies to instruct remedial readers in field-based settings.

READ 30566: Researching Classroom Practice 3 s.h.
This course will provide opportunities for students to read and analyze various types of research for the purposes of improving practice. Students will focus on action research by designing a project that includes selecting the issue, determining the data to be collected, data analysis and interpretation, and change of teaching and learning behavior.

READ 30570: Clinical Experiences In Reading 6 s.h.
Prerequisite: READ 30560
Students plan and execute reading lessons for groups of remedial readers. They integrate the results of testing, observation and the assessment of reading-related factors in order to devise appropriate sequences of corrective instruction. Students select and use varied teaching strategies, including remedial techniques in order to adjust to the individual needs of their pupils. Following weekly observations, students discuss their performance with the instructor. During the seminar portion of the class, students learn to administer, interpret and evaluate diagnostic instruments. They are taught to use corrective procedures which integrate the language arts and utilize computers.

READ 30599: Reading Research Seminar I 1 s.h.
Prerequisite: READ 30560
This course introduces students to the various paradigms in educational research in literacy. The course focuses on qualitative methodological research in education, designing teacher research, writing a literature review, developing a research plan, and obtaining research permissions. The course serves as one course in a two-course sequence for thesis preparation and writing.

READ 30600: Reading Research Seminar II 3 s.h.
Prerequisite(s): READ 30570 and READ 30599
The most commonly used techniques employed in educational research are studied. Guided reading and discussion of research articles in reading education are provided. Research studies are analyzed and critiqued with special attention given to the methodology of the studies. Enrollment is limited to matriculated graduate students with permission of the graduate advisor.

READ 30610: INTERNSHIP-READING 6 s.h.

READ 30611: Literacy Assessment 3 s.h.
Prerequisite(s): None
This course is an examination of various types of literacy problems and the techniques, processes and instruments for assessing literacy. Topics include the adminstration of a variety of assessment tools and the interpretation of assessment data for selecting instructional methods, facilitating instructional decisions, monitoring students performance, and providing intervention based on informed assessment.

SECD 03350: Teaching Students Of Linguistic And Cultural Diversity 1 s.h.
Corequisites: ECED 23446 and ECED 23447 or ELEM 02445 and ELEM 02448 or SECD 03435 and SECD 03436
The issues of inclusion form an integral part of a teacher preparation program. The schooling of all children demands that diversity in multiple forms be addressed in the inclusive classroom, including cultural and linguistic diversity. Knowledge about diversities and the performance of appropriate instructional strategies are emphasized in this course, and attention is directed to the sensitivity needed to assist the learning of students of linguistic and cultural diversity.

SMED 60550: Schools & Society: Foundations for Secondary Teaching 3 s.h.
This introductory course addresses a number of foundational questions in the field of education, including: Who goes to school and for what purposes? What is taught and who decides? How are schools organized and who funds them? How are schools different now than they were 100 years ago? What legal precedents and reform movements have shaped education today? How are schools in the United States similar to and different from those abroad?

SMED 60552: Teaching Content in Diverse Classrooms 3 s.h.
Prerequisites: SMED 60.550
This course will enable Subject Mattere Education candidates to gain a multifaceted understanding of the individual and institutional elements that impact student achievement and schooling experience. Candidated will investigate the roles the genger, SES, race, ethnicity, home language, religion, and other indentity-based aspects shape school experiences, learning, and achievement. Candidates will then learn about specific approaches and instructional practices that they can use in the classroom to promote learning for culturally and linguistically diverse students, including teaching acadeemic language, differentiating instruction and assessments, and supporting home, community and school partnership.

SMED 60553: Creating Supportive Middle and High School Learning Environments 3 s.h.
Prerequisites: SMED 60.550
This course will enable Subject Matter Education teacher candidates to gain an understanding to the effect of the learning environment on student achievement. Candidates will learn strategies for creating and maintaining a positive learning environment in which all learners can achieve their potential. This course will focus on student-centered instructions that promotes civil discourse and strategies to address non-engagement.

SMED 60560: Curriculum, Instruction & Assessment I 3 s.h.
Prerequisite: SMED 60.553 and Co-requisite: SMED 60.562
The first of two subject-specific methods courses, this class is designed for teacher candidates majoring in English, the social studies, or a wold language and planning careers as P-12 teachers. In conjunction with a co-requisited residency, this course includes both campus and public school-based experiences dealing with a range of topics necessary to build a functioning learning community, including: subject-specific pedagogy, lesson and unit planning, classroom management, and attention to learning among the diverse populations who attend New Jersey Schools.

SMED 60561: Curriculum, Instruction, & Assessment II 3 s.h.
Prerequisite: SMED 60.650 and Co-requisite: SMED 60.563
The second of two subject-specific methods courses, this class is designed for teacher candidates majoring in English, the social studies, or a world language and planning careers as K-12 teachers. In addition to exploring topics addressed in Curriculu, Instruction, & Assessment I in greater depth, this course places an emplasis on practitioner research, requiring students to develop inquiry questions about their own practice and to collect and analyze relevant data from the field.

SMED 60562: Clinical Practice I 3 s.h.
Prerequisite: SMED 60553; Co-requisite: SMED 60560 OR READ 30520 OR SELN 60577
This course is the first of two state-mandated field experiences required for candidates in the MST Program. Candidates will attend their field placements 3 full days per week during the semester, while taking the co-requisite subjects Curriculum, Instruction, and Assessment I (SMED 60560), Content Area Literacy (READ 30520), and Effective Inclusive Instruction (SELN 60577). This course is graded as Pass/No Credit, with a "Pass" indicating a grade of C- or better.

SMED 60563: Clinical Practice II 9 s.h.
Prerequisite: SMED 60562; Co-requisite: SMED 60561
This is the second of the two state-mandated field experiences required for candidates in the MST program. Continuing in their field placement from Clinical Practice I, candidates will attend their field placements 5 full days per week during the semester, while taking the co-requisite subject Curriculum, Instruction, and Assessment II (SMED 60561).This course is graded as Pass/No Credit, with a "Pass" indicating a grade of C- or better.

SMED 60564: MST SME Professional Seminar 3 s.h.
Prerequisite: SMED 60.562 and Co-requisite: SMED 60.561
This is the capstone course in the MST SME and will prepare candidates for their teaching positions by focusing on issues critical to new teachers. The coures is designed to support candiddates in their final transition from teacher candidate to treacher. Topics include understanding school climate, developing a professional development plan, developing a plan for communicating with families, planning for the first six weeks (or unit) of schoiol, and preparing for a substitute teacher.

CJ 09510: Contemporary Issues In Criminal Justice 3 s.h.
This is a graduate level course focusing on understanding the criminal justice system both in terms of the uniqueness of each component (law enforcement, courts, and corrections) and in terms of the complementary nature of the whole, advances and emerging issues in each component of the criminal justice system and in the system as a whole, research related to contemporary issues and the practical applications of said research, and a critical assessment of both the research in the field and the issues facing the criminal justice system.

CJ 09511: Research Methods I 3 s.h.
This is a graduate level course focusing on understanding various research methods used in criminal justice, the advantages and disadvantages of different research methods (including the appropriateness for hypothesis testing), techniques for conducing research utilizing the appropriate method(s) given a particular question, the ability to critically assess research studies in the field, and the ability to conduct research for a Master's Thesis.

CJ 09512: Research Methods II 3 s.h.
This course will enable students to understand various statistics and statistical techniques used in criminal justice, to understand the advantages and disadvantages of different statistics, to be able to conduct research utilizing the appropriate statistic given a particular question and/or set of data, to be able to critically assess research studies in the field, and to be able to conduct research for a Master's Thesis.

CJ 09515: Law And Society 3 s.h.
This course will allow students to understand the basic process for law formation and the obvious and hidden influences on the creation of American law; to understand the role of laws in American society, in part as a reflection of needs, in part as a reflection of public/political desires, and in part as tools of the powerful; to understand how the complexities in law and its relationship to society impact on other aspects of the criminal justice system; and to be able to critically assess the formation of law, the interpretation of law, and the application of law in American socity.

CJ 09516: Administrative Law/Ethics 3 s.h.
This course focuses on the relevance of administrative law and ethics as they relate to the decision making process in criminal justice. Administrative actions and ethical issues permeate the criminal justice system. As such, students will be exposed to Administrative Law, including discussion of key principles of Administrative Law, limiting doctrines, and particular agency rules. Students will also spend time studying ethics. Discussions may include police corruption, prosecutorial misconduct, ethical issues in sentencing, prison corruption, and ethics in the creation and implementation of crime control policy.

CJ 09517: Criminal Justice Policy Analysis 3 s.h.
This course will enable students to understand the importance of program and policy evaluation, to understand how to evaluate programs and policies with several outcome measures, to be aware of the effectiveness of current criminal justice policies and procedures, and to be able to evaluate a current criminal justice policy or procedure using primary or secondary data.

CJ 09518: Contemporary Developments In Theory 3 s.h.
This course will allow students to understand the modern development of criminal justice theory, to understand current approaches in theory, including strengths and weaknesses of various theoretical perspectives, to be able to conduct research guided by theory, and to be able to critically assess research studies in the field.

CJ 09519: Seminar In Criminal Justice Planning 3 s.h.
This course focuses on the techniques of program and policy planning and evaluation. Students will focus on existing criminal justice programs and policies while at the same time learning the process of proper program and policy evaluation. Specifically, students will learn how to plan change through a series of steps: problem analysis, creating time-bound and measurable goals and objectives, designing a program or policy, developing action plans, developing a monitoring plan, developing an evaluation plan and instrument and finally how to initiate the program or policy. Where appropriate, students will conduct their analysis on existing and policies as well as creating their own plans as outlined above.

CJ 09520: Courts And Supportive Agencies 3 s.h.
This course deals with cases that come from both juvenile and adult courts and which often result in referrals to supportive social agencies. Included are an analysis of the services provided by supportive agencies, such as foster home services, substance abuse services or anger management services, as well as witness decorum while providing reports to a court, such as presentence investigation reports.

CJ 09521: Prevention And Rehabilitation 3 s.h.
This graduate seminar will include in-depth study of the theory and research on the causes of criminal behavior; the legal, ethical, and practical issues involved in working with offenders; and classification and treatment in the correctional context. Students will become familiar with the most widely used and effective correctional treatment approaches and empirical research evaluating programs and policies.

CJ 09522: Seminar In Violence 3 s.h.
This graduate seminar will include an in-depth study of current theory and research on the biological, psychological, and sociological causes of violent behavior. It will examine the various types of violent offenses and the impact of these crimes. Students will learn to critically assess the empirical research on the causes and impact of violence, and understand the practical applications of this research.

CJ 09523: White-Collar Crime 3 s.h.
This graduate course will include an in-depth study of white-collar crime. White-collar crime has generally been a neglected topic in criminology and criminal justice, but it has gained more prominence as scholars recognized the costs associated with white-collar crime and the importance of studying it for prevention purposes. The course will cover a range of topics from the definitional issues and the problems involved in measuring and collecting data on white-collar crime to theoretical explanations and the prevention of white-collar crime. Students will learn to critically assess significant research concerning white-collar crime and understand the practical applications of this research. This course will not be offered every semester.

CJ 09524: Police And Society 3 s.h.
This course will focus on the theories and scholarly studies in policing and apply this knowledge to understanding police functions in society. The objectives of this course are to understand the police function both in terms of its nature and its relationship with society, to appreciate advances and emerging theories in policing, and to assess current research in the field and its implications for the police profession. Students are expected to follow the scientific research process to do research, write papers, and have informed discussion of current police policies and practices.

CJ 09525: Altruism, Cooperation, And Criminal Justice 3 s.h.
This course examines the philosophical and empirical data of altruism and cooperation and relates these fields to the study of criminal justice organizations. Specifically, we examine whether it is necessary to "be nice" to work in the criminal justice field. We further examine whether those that are more cooperative and altruistic perform their jobs more effectively and how relationships between client and worker, and worker and supervisor are influenced by altruistic and cooperative tendencies of the individuals. Finally, students will collect, analyze, and summarize original data testing the hypotheses offered within the course.

CJ 09526: Management Of Criminal Justice Organizations 3 s.h.
The course focuses on diagnosing criminal justice organizations based on their: structure, purpose, leadership styles, rewards and motivations, relationships and communication theories, decision-making processes, goals and objectives. Students learn how to assess the effectiveness of various criminal justice agencies based on the aforementioned concepts and will also learn how to integrate planned change to a criminal justice organization. Criminal justice organizations exist in different political and legal environments than private, for-profit institutions and students learn how to assess these differences and gain an understanding of how criminal justice organizations work at the organizational and individual level.

CJ 09527: Gender & Crime 3 s.h.
This graduate course will include an in-depth study of gender issues in criminal justice system. The class will start with a historical view of female criminality and then examine the empirical reality of female offending. Discussions will cover theoretical explanations for female offending and the processing of female offenders throughout the criminal justice system, from arrest to parole. Students will also learn about females as victims of crime and their experiences with criminal justice system. Further, the class will explore the issues faced by female professionals employed within the criminal justice system. Students will also learn how to critically assess the current information on female offenders and victims in order to determine the best way to address their needs and issues.

CJ 09528: Seminar In Juvenile Justice And Delinquency 3 s.h.
This course will examine the biological, psychological, and sociological factors that increase the risk of juvenile delinquency, and how the justice system has reacted to crime committed by young people. Topics such as early intervention, protective factors, diversion, gangs, research based rehabilitation programs, and transfer to adult court will be examined. Students also will learn to critically assess and design evaluations of prevention and rehabilitation programs designed for juveniles.

CJ 09529: Community Justice 3 s.h.
This course will examine how the community can work with police, courts, and correctional agencies to prevent crime and rehabilitate and reintegrate offenders. It will examine the effect on implementing community programs of the organizational environment and effective recruitment, screening, and training of community members. Techniques such as participatory management, collaboration, problem solving, and mediation will be examined. Students also will learn to critically assess and design evaluations of community programs.

CJ 09530: International Criminal Law Seminar 3 s.h.
This graduate course will include an in-depth study of international crimes and the international criminal process. It will examine the various types of international criminal offences, the impact they have on the international community, and the international legal consequence for such crimes. Students will learn to critically analyze historical international cases and understand case precedents and their future impact on international criminal law.

CJ 09531: Sentencing: Philosophy and Policy 3 s.h.
This graduate level course introduces the student to the broad range of topics inherent within criminal justice sentencing. The course covers the major theories of sentencing, including: retribution, deterrence, incapacitation and rehabilitation. We delve into the philosophy of each major form and examine the moral, ethical and practical limitations and advantages of each. Students examine theoretical and empirical writings and are expected to write a major paper based on a relevant sentencing issue. The course also examines sentencing policy in the United States, and in other countries, with particular attention paid to the intended and unintended consequences of major sentencing initiatives such as: guidelines, recidivist statutes, mandatory penalties and other current sentencing policies.

CJ 09532: Race, Ethnicity, Class & Justice 3 s.h.
This graduate course will include an in-depth study of race, ethnicity and class, and their evolving impact upon the U.S. criminal justice system, as well as the system's impact on minorities, the poor, and their communities. A major focus of this course will be a critical examination and analysis of how race, ethnicity, and class have impacted the nature, content, and quality of justice that is rendered within the nation. One major purpose of our study is to provide students with an opportunity to gain sophisticated understanding of the inequities that minorities experience within our system of justice and in the wider community. Students will learn to critically assess significant research concerning race, ethnicity and class and the criminal justice system, and understand the practical applications of this research.

CJ 09600: INDEPENDENT STUDY 1 to 6 s.h.

CJ 09601: Master's Thesis In Criminal Justice I 3 s.h.
This course requires students to design and begin implementing their own research project to be used to satisfy the program's thesis requirement. Under the guidance of a member of the Law and Justice Department faculty who agrees to serve as Thesis Advisor, the student will develop a Research Proposal that will consist of an introduction and Statement of the Problem, a Literature Review, a Data and Methods Section, and a brief summary of the proposed research. The student will defend this Research Proposal in front of the Master's Thesis Committee, and will begin implementing the research after obtaining the Committee's approval.

CJ 09602: Master's Thesis In Criminal Justice II 3 s.h.
This course requires students to complete the research project they began in Master's Thesis in Criminal Justice I in order to satisfy the program's thesis requirement. Under the guidance of a member of the Law and Justice Department faculty who has agreed to serve as Thesis Advisor, the student will collect their data or obtain secondary data, analyze the data, and write the results, discussion and conclusion, and references section. They will combine their work from Master's Thesis I and II into a completed thesis which they will present to the Master's Thesis Committee for approval.

LAWJ 05120: Introduction To Security 3 s.h.
This course presents the organization and management of the security function in industry, business, government and institutions. It also covers the protection of personnel, facilities and other assets as well as the administrative, legal and technical problems of loss prevention and control.

LAWJ 05175: Survey Of Criminal Justice 3 s.h.
This general education approved social science elective course deals with the nature of crime and criminal responsibility, and elements of social control. It also surveys the criminal justice process from original law enforcement contact through the judicial and correctional phases. It includes professional roles and opportunities in the criminal justice field.

LAWJ 05200: Introduction To Corrections 3 s.h.
This course studies the historical development of correctional practices in the handling of criminals from early to modern times. Students survey contemporary correctional organized structures and treatment processes, as well as institutional and community based programs and problems.

LAWJ 05201: Introduction To Courts 3 s.h.
This course covers the organization of both the state and federal court systems; the management and administration of those courts; the relationship of courts to the police, corrections, and community; the criminal trial process, including pre-trial and post-trial processes; and the judiciary and judicial power, including the areas of separation of powers and judicial behavior.

LAWJ 05202: American Police 3 s.h.
This course covers the philosophy and history of the police role in society. It surveys organizational forms and basic procedures of police work; police ethics and professional preparation for law enforcement; and, major police problems confronting the police today.

LAWJ 05205: Minorities, Crime And Criminal Justice 3 s.h.
In this course students critically examine the involvement of minorities with crime in the U.S. both as perpetrators and victims. Additionally, they will be afforded the opportunity to understand, critically examine, and apply significant theoretical perspectives for the study of minority criminality. They will develop an understanding of the impact of race and class within the law-making process, the content of the law, and the quality of justice afforded minorities within the American criminal justice system.

LAWJ 05210: Restorative Justice 3 s.h.
This course surveys the major theoretical and applied concepts of Restorative and Community Justice. Students will examine how the Restorative and Community Justice processes differ from the traditional, retributive criminal justice system and how Restorative Justice models attempt to benefit the victim, offender and the community. Some of the issues to be covered are: informal justice practices, reintegrative shaming, forgiveness and resentment, and the efficacy of Restorative and Community Justice initiatives. Additionally, students may have opportunities to interact with adjudicated youth from New Jersey's Restorative Justice Project.

LAWJ 05220: Victimology 3 s.h.
This course gives students insight into the "forgotten" party in a crime, the victim. The course covers victims' rights in the Justice System with specific coverage of the following: the social, economic and racial impacts of crime on victims; victims and courts; police reaction to victims; restitution; offender accountability and the dramatic increase in victims programs and services.

LAWJ 05255: Criminal Law 3 s.h.
This course offers a comprehensive review of the major common law and statutory crimes including homicide, rape and all related personal and property offenses. The students will be introduced to domestic violence offenses. Considerable attention is given to the social, moral and constitutional frameworks of the criminal law with a review of recent and standard judicial interpretations. It also offers a review of defenses and mitigation.

LAWJ 05274: Criminal Justice And Community Relations 3 s.h.
This is a broad-based course on the relationship between the community and crime and the criminal. The course covers such topical areas as police-community relationships, the culture of the inner city, human service delivery systems, the role of citizen and business groups and the criminal justice system, and the various ways in which criminal justice agencies have an obligation to the community at large.

LAWJ 05276: Parole, Probation And Community Corrections 3 s.h.
A comprehensive review of the noninstitutional response to criminal behavior, this course covers probation, parole and community corrections in depth. It includes topics like work release, education release, half-way houses, drug and alcohol centers, legal aspects of these processes and the effectiveness of these programs.

LAWJ 05285: Criminal Investigation 3 s.h.
Students study the criminal investigation process. Analysis of problems encountered in interviewing, interrogating and investigating is included. The course covers investigative techniques that may be applied to investigative problems and develops application of criminal investigation theories to the administration of justice.

LAWJ 05290: Forensic Law 3 s.h.
This class offers a comprehensive analysis of legal issues involving forensic techniques in the justice systems. This course examines the importance of admissibility, relevance and materiality as it relates to the evidence and the various experts in Forensics. The topics include bloodstain patter and trace evidence, pathology and gunshot wounds, DNA fingerprinting, micrography, postmortem determinations and case studies in Forensic Science.

LAWJ 05305: Law And Evidence 3 s.h.
This course covers the basic principles of criminal evidence, including burdens of proof, judicial notice, presumptions, testimonial privileges and hearsay; the rule of exclusion of evidence, confessions, identifications and electronic eavesdropping; and the use of physical and demonstrative evidence including fingerprints, exhibits, photographs, documents and writings, scientific evidence and the polygraph.

LAWJ 05310: Criminal Jurisprudence 3 s.h.
Students study the history and philosophy of modern criminal law. This course covers problems of contemporary jurisprudence and especially the typology of constitutional issues as it relates to due process and its requirements.

LAWJ 05312: Criminal Procedure II 3 s.h.
This course will examine the legal procedures by which the criminal justice system operates. Students will assess United States Supreme Court opinions so as to explore issues related to the Fourth, Fifth, Sixth, Eighthm, and Fourteenth Amendments to the Constitution, including pre-trial processes, speedy trial, the prosecution function, bail, the identification of suspects, the right to counsel, the adjudication process, the law of confessions and interrogation, and the privilege against compelled selp-incrimination. This course has two primary objectives. The first is to introduce students to the analysis of judicial opinions, a primary sourse of law in the American legal system. The second is to become familiar with both the fundamental doctrines of constitutional criminal procedure and the important policy issues that emanate therefrom.

LAWJ 05315: Criminal Justice And Social Conflict 3 s.h.
This course covers the major crises in our basic American institutions. Students examine the various aspects of social mobility, population explosion, social stratification, sex revolution, militarism, and the generation gap as they relate to problems of social justice in our society.

LAWJ 05320: Civil Aspects Of Law Enforcement 3 s.h.
Students undertake an analysis of those areas in civil law with which law enforcement professionals frequently encounter. Topics include family law, torts, administrative and environmental issues, property disputes, liens, business and consumer transactions.

LAWJ 05322: Drugs And Crime In America 3 s.h.
This course explores and analyzes the relationship between illegal drugs and crime and all the relevant issues and ramifications. These include, but are not limited to: national and international trafficking, control of the problem, legalization, and explanations for drug use.

LAWJ 05324: Sentencing And The Rights Of The Convicted 3 s.h.
Students explore, analyze, and critique the relevant structures, processes, and impacts of criminal sentencing and sentences. The course is designed to examine critically the relevant political, philosophical and social driving forces of change and their impacts on the system and society.

LAWJ 05325: Comparative And International Criminal Justice 3 s.h.
The course is an introduction to comparative and international criminal justice. It compares the criminal justice system in the Unit States with other national systems in the five continents and major regions of the world. Areas examined include crime, criminal law, policing, court processes, and corrections. This course also provides an introduction to the globalization of crime including terrorism, drug trafficking, human smuggling, and war crimes and the development of domestic and international efforts in fighting these crimes. The goal of this course is to help students develop comparative and international perspectives in addressing problems facing the criminal justice system.

LAWJ 05326: International Terrorism 3 s.h.
This course explores the historical development of international terrorism and provides a foundational knowledge of current terrorist groups and their tactics. Specifically, this course introduces the student to the definition, origin, and evolution of international terrorism; the roles of world-views, ideologies, mind sets, and motivations; and the different types of terrorism. Students will also study the organization, tactics, operational capabilities and threats posed by terrorist groups. Finally, the course will introduce the current status of anit- and counterterrorism efforts in the United States.

LAWJ 05330: Problems In World Justice 3 s.h.
This multidisciplinary course examines the principles of justice and their application to the criminal justice system and society at large. Additionally, a critical examination of significant issues and concerns of world justice will be offered.

LAWJ 05335: Criminal Procedure I 3 s.h.
This course will examine the legal procedures by which the criminal justice system operates. Students will assess United States Supreme Court opinions so as to explore issues related to the Fourth Amendment to the Constitution, including search and seizure of premises and persons, the arrest and detention of suspected criminals, and the remedies available for constitutional violations. This course has two primary objectives. The first is to introduce students to the analysis of judicial opinions, a primary sourse of law in the American legal system. The second is to become familiar with both the fundamental doctrines of constitutional criminal procedure and the important policy issues that emanate therefrom.

LAWJ 05337: Treatment Of The Offender 3 s.h.
This course covers the major therapeutic approaches to the correction of criminal and delinquent behavior and a review of processes and procedures of corrections and of research on the outcome of various treatment approaches. Students analyze the ethical and legal problems related to rehabilitation in a correctional setting.

LAWJ 05342: Counseling And Guidance Of The Offender 3 s.h.
A survey of basic principles and techniques of counseling of offenders, this course includes interviewing, case conferences, case histories, individual and group counseling, classification procedures, and team treatment participation.

LAWJ 05346: Women, Crime And Criminal Justice 3 s.h.
This course covers the many facets of women, crime and criminal justice, including past and present trends of female crime along with its relationship to the three major components of the criminal justice system: police, courts and corrections. Furthermore, this course addresses gender as a significant variable in all aspects of society, both criminal and non-criminal.

LAWJ 05356: Criminal Justice Internship I 3 to 6 s.h.
Prerequisites: COMP 01112 or HONR 01112
The course will remove the student from the academic theoretical classroom and place the student into a rich blend of practical field experiences in various criminal justice or similar agencies. The student must follow strict guidelines set forth to uphold University and agency rules, policies and expectations.

LAWJ 05361: Introduction To Juvenile Justice 3 s.h.
This course covers the history and philosophy of the juvenile justice system, which includes the development of the system through the 19th and 20th centuries and the decisions rendered by the United States Supreme Court. The student also scrutinize the various steps in the police, courts and corrections stages of the juvenile justice system.

LAWJ 05369: Theories Of Crime And Criminality 3 s.h.
Prerequisite(s): LAWJ 05175 and 6 credits of Law and Justice Courses
In this course students explore the extent of crime and delinquency in the United States and the full range of relevant theories of causation. They also synthesize and apply appropriate theories to such concepts and topics as race, social class, gangs, drugs, family, schools, and neighborhoods.

LAWJ 05379: The "Political Prisoner" 3 s.h.
This course examines the causes and significance of the political prisoner concept on the criminal justice system generally and the U.S. prison systems specifically. The course deals with varying perceptions of different segments of the population about the existence and scope of this phenomenon in depth.

LAWJ 05380: Criminal Justice Research 3 s.h.
Prerequisites: LAWJ 05369
Students study the basic principles of research and statistics. This course undertakes a review of contemporary criminal justice research projects, emphasizing evaluation of journal studies and basic planning and writing of the research paper.

LAWJ 05381: Crime Mapping and Crime Analysis I 3 s.h.
This course introduces students to the fundamentals of crime mapping and crime analysis. This hands on course teaches students how to use databases, spreadsheets and other tools to analyze crime, produce crime analysis products for police commanders and how to effectively communicate analysis results to decision-makers. Emphasis is placed on using the analyses that are learned to influence the thinking of police decision-makers so that they can implement effective responses to crime and disorder problems.

LAWJ 05392: Criminal Justice Administration 3 s.h.
This course provides upper level students with the concepts, theories, and principles of managing and administering criminal justice organizations. The content of the course is applied to police, courts, and corrections agencies and gives the student a total system approach to the subject.

LAWJ 05395: The Incarceration Experience 3 s.h.
This course focuses on the exploration of various aspects of incarcerating criminals. It includes the history of incarceration, the prisonization process, prison subcultures, violence and victimization, and the underground prison economy.

LAWJ 05401: Law And Human Rights 3 s.h.
Prerequisite(s): LAWJ 05175 and 6 credits of Law and Justice Courses
This course reviews individual civil rights and liberties in detail with a particular emphasis on federal-state legislation on discrimination, substantive and procedural due process materials and 1st amendment problems. Specific attention is given to the role police, courts and correctional systems play in the enforcement and enhancement of such rights.

LAWJ 05415: Selected Topics In Criminal Justice 3 s.h.
This course promotes intensive research and analysis in Special Topics in Criminal Justice. Students engage in either theoretical or applied research in topics that can be mutually agreed upon between faculty and student. Topics will vary but may include female criminality, XYY theory, insanity, mental health and the justice systems, advanced security systems or radical criminology.

LAWJ 05469: Seminar In Law/Justice - Wi 3 s.h.
Prerequisites: LAWJ 05175, LAWJ 05255, LAWJ 05380, one of: LAWJ 05200, LAWJ 05201, or LAWJ 05202 and senior standing.
This seminar will cover topics relating to how law and justice are put into practice by the police, courts, and corrections system. Important issues affecting society and the criminal justice system as a whole will be examined in depth. Students will be expected to read scholarly work exploring these issues; participate in class discussions; conduct library research; write short, informal memos and a senior level research paper; present oral reports on their research; and demonstrate their understanding of assigned readings and the research reported by classmates in a final examination.

BUS 01505: MBA Supervised Internship 3 s.h.
This course requires a field experience in government, business, industry or non-profit organizations. Students complete assignments that prepare them for productive employment upon graduation. The MBA faculty member will partner with each employer and student to define and enrich the student's work experiences and to monitor and assess the learning process. This course is integral to the MBA Program and Supervised Internship credits cannot be used to substitute MBA elective credits.

BUS 01518: Integrative Managerial Skills 3 s.h.
This course serves as a keystone course for the M.B.A. program. Key skills, tools, and issues necessary for further study will be developed and extended. Course topics and techniques include information systems, financial ratios, behavioral, presentation, team building, quantitative analysis, critical thinking, written communication, legal and ethical issues, and library research including electronic data bases and internet research.

BUS 01521: Integrative M.B.A. Seminar 3 s.h.
A capstone course for the M.B.A. program, it aids students in reinforcing and integrating core courses by studying strategic audits and process analysis techniques. Student projects will use teams to analyze how organizations use people, operational management, information systems and financial measurements to achieve strategic and operational effectiveness.

BUS 01550: INDEPENDENT STUDY 1 to 4.5 s.h.

BUS 01600: Special Topics In Business Administration 3 to 6 s.h.
Students will study advanced level topics in specific disciplines as identified through participation in indepth seminars on topics to be determined by faculty in consultation with the Graduate Committee of the College of Business. Students will complete research or projects on specialized topics in various disciplines in Business Administration. Students may take each topic only once. This course may not be offered annually.

HRM 06500: INDEPENDENT STUDY:HRM 1 to 6 s.h.

HRM 06598: Special Topics In Human Resources Management 3 s.h.
Students will study advanced level topics in Human Resources Management. The exact topics to be covered will change over time. Contact the MBA office or Management and MIS Department for details.

HRM 06605: Strategic Human Resource Management 3 s.h.
Prerequisite(s): Admission into the MBA Program or Admission into the Certificate of Advanced Graduate Study (CAGS) in Business Management
Strategic Human Resource Management consists of planned organizational activities designed to increase organizational effectiveness and equity. This course outlines the transformation of HRM from a clerical function to an important strategic partner of top management. It focuses on the ability of HRM to provide a source of competitive advantage to forward-thinking organizations.

HRM 06677: PEOPLE ANALYTICS 3 s.h.
People analytics is the use of data-driven techniques for managing people. People analytics leads to better decisions and superior organizational performance. In this course, students will learn how to use people analytic tools to solve workplace challenges. This course includes a project-based learning component.

HRM 06688: Human Resource Management In Health Promotion 3 s.h.
Prerequisite: Admission to the MBA or to the COGS in Human Resource Management
Human resource management consists of planned organizational activities that are designed to improve efficiency and equity. In this class, health promotion professionals will develop their capabilities as human resource managers and will enhance their appreciation of human resource management professionals who make the strategic choice to promote employee health.

HRM 06699: Talent Leadership 3 s.h.
Prerequisite: Admission to the MBA or to the COGS in Human Resource Management
Organizations face many challenges when it comes to managing and developing talent. In large organizations, pipelines are nurtured and developed. In emerging systems, talent acquisition is nimbler and more nuanced. A successful HR professional must understand the different methods to manage talent based on the organization and how to create a integrated, systematic approach to attracting, developing, engaging, and retaining critical talent.

MGT 01510: Professional, Legal and Managerial Responsibilities 3 s.h.
Admission into the MBA program or admission into the COGS in Business.
In that business leaders have become personally and professionally responsible for the legal and ethical behaviors of the individuals within their organizations, the need for formal training in ethical and legal decision making is essential. In this course students will learn how to effectively apply a variety of legal and ethical frameworks within the global marketplace. Students will also learn appropriate and effective legal and ethical issue reporting practices, principles and responsibilities.

MGT 06300: Organizational Behavior 3 s.h.
Prerequisite(s): Junior standing
This course examines human relations in management. The course studies the concern for both task and process in the light of structure, goals and human relationships found in organized efforts. It also covers the application of new management theories in the areas of motivation, leadership and group problem-solving by a variety of means, including simulation, case studies, and role playing.

MGT 06304: Organizational Change and Development 3 s.h.
Prerequisite(s): MGT 06300 or PSY 08220 or CMS 04260 and Admission to any Business major or CUGS in Management & Leadership or CUGS in Training & Development
This course studies factors that facilitate or inhibit organizational change as well as research findings and theory which deal with methods for diagnosing organizational climate, and selecting and utilizing techniques for bringing about change and overcoming resistance to change. It also analyzes and evaluates roles and strategies used by change agents to initiate structure and direct organizational change.

MGT 06305: Operations Management 3 s.h.
Prerequisites: Grades of C- or better in: STAT 02260 and(MATH 01130 or MATH 03125 or MATH 01140)
This course provides a critical study of the operational functions of the business enterprise. Its topics include capital costs and investment criteria, plant location and layout, process planning and production design, job designs, work methods and cost controls.

MGT 06310: Leadership and Supervision for Managers 3 s.h.
Prerequisite(s): MGT 06300 and Admission to the Management major or CUGS in Management and Leadership
The course is designed for undergraduate business students. Course content will cover the theories of business leadership and supervision- with the focus on first line supervisors. Students will focus on the theory and acquisition of various business leadership and supervisory tasks and skills necessary to work with other business managers in a global market world and to supervise workers with diverse backgrounds. These business skills will include establishing workplace goals, organizing work units for productivity, conducting interviews, giving feedback to subordinate employees, designing and implementing employee motivation programs, and supervising workteams. By the end of the course, students will be able to effectively diagnose the complex dynamics of leadership and supervision in business environments and take action as leaders and supervisors to improve individual and organization performance.

MGT 06402: Business Policy 3 s.h.
Prerequisites: MIS 02334 and MGT 98242, MKT 0920 0, MGT 06300, MGT 06305, FIN 04300 and Senior Standing
This capstone course in business policy provides students with an opportunity to integrate what they have learned in separate business fields and use this knowledge in the analysis of complex business problems. There is an emphasis on the skills of identifying, analyzing and solving problems which are not pre-judged as being marketing problems, finance problems, etc. Students are encouraged to consider issues from the viewpoint of general management rather than as a functional specialist or researcher.

MGT 06500: Designing, Developing, And Leading High Performance Organizations 3 s.h.
Students will study and develop skills in interpersonal behavior in organizations and groups. They will learn about issues in leadership, how groups function, elements of power and influence, conflict management, management of time and stress, creative and rational problem solving in groups. In addition, they will study theories of motivation and methods of empowerment in organizations.

MGT 06501: Advanced Operations Management And Strategy 3 s.h.
Prerequisite: MBA Foundation Courses
This course is designed to familiarize students with the complexities of operating a manufacturing, as well as a service, organization. The focus is primarily on gaining a competitive edge by improving functions of operations management. Concepts and tools pertaining to business forecasting, operations decision-making, resources allocation, location and capacity planning, inventory control and management, facility layouts, scheduling, project management, and quality control and management will be covered. Case studies and team projects will also be used to provide practical applications in a realistic business context.

MGT 06502: International Business And Society 3 s.h.
This course addresses numerous aspects of the increasingly global business environment and implications for business organizations and key stakeholders. Frameworks for comparing political, legal, social, economic, and governmental differences across nations are utilized. Macro issues include trade theories, trade regimes, roles of governments and global institutions. Strategies and structures adopted by various types of international firms and functional approaches to international finance, management, and marketing are also included.

MGT 06503: Organization Development 3 s.h.
Students study the application behavioral science in the management of planned organizational change and development. In addition to the analysis of issues facing the change agent, students also develop skills in implementing and intervening in the effort to improve organizational effectiveness. This course may not be offered annually.

MGT 06507: Manufacturing and Service Operations Management 3 s.h.
Prerequisite(s): Admission into the MBA program or Business COGs
This course provides an introduction to the field of manufacturing and service operations management. The course aims to familiarize students with the set of business activities whereby resources, flowing within a defined system, are combined and transformed to add value in accordance with organizational objectives. OM is one off the three major functions of any organization, and it is integrally related to all the other business functions in the context of manufacturing and services. The focus of this course is to provide the students with the tools, technologies, and processes they need to improve their oraganization's profitability and service by adhering to the ethical norms of the society.

MGT 06510: Strategic Engineering Management 3 s.h.
The course introduces engineers to the concepts and application of strategic planning specifically to the roles and responsibilities of the engineering function in the strategic planning process for high-tech firms.

MGT 06515: Employee Engagement and Performance 1.5 s.h.
Engaged employees have positive attitudes towards their jobs and employers and they are willing to do whatever it takes in order to get work done well. This course will introduce Masters of Business Administration students to the science behind employee engagement. Students are encouraged to take additional Management courses in order to enhance their employee engagement skills.

MGT 06519: Leadership In Health Promotion 3 s.h.
The course is designed for graduate students in the M.A. in Wellness and Lifestyle Management program. Course content will cover the theories of leadership in health promotion and the focus of this course will be on leadership from a variety of perspectives - - health organizational leadership in the external environment, as well as leadership at the top, middle and lower levels inside organizations. Students will focus on the theory and implementation of various health leadership tasks and responsibilities including working with other leaders in a multinational world, supervising workers with diverse backgrounds. These leadership skills will include establishing workplace goals, organizing work units for productivity, conducting interviews, giving feedback to subordinate employees, designing and implementing employee motivation programs, changing organization culture, the capacity to lead globally, leading work teams and managing workforce diversity. By the end of this course, students will be able to effectively diagnose the complex dynamics of leadership in health organizational environments and take action as leaders and to improve individual and health organization performance.

MGT 06520: Global Leadership And Organization Culture 3 s.h.
The course is designed for graduate business students. Course content will cover the theories of business leadership and the focus of this course will be on leadership from a variety of perspectives--organizational leadership in the external environment, as well as leadership at the top, middle and lower levels inside organizations. Students will focus on the theory and implementation of various business leadership tasks and responsibilities including working with other leaders in a multinational world, supervising workers with diverse backgrounds. These business skills will include establishing workplace goals, organizing work units for productivity, conducting interviews, giving feedback to subordinate employees, designing and implementing employee motivation programs, changing organization culture, the capacity to lead globally, leading work teams and managing workforce diversity. By the end of the course, students will be able to effectively diagnose the complex dynamics of leadership in business environments and take action as leaders and to improve individual and organization performance.

MGT 06521: Leadership Theory and Practice 3 s.h.
Prerequisites: Graduate Standing or Permission from Instructor.
The elective course is designed for graduate in MBA Management program students. Course content will cover the theories of leadership and practice. The focus of this course will be on a leadership influence on organizational concept and practices from a variety of perspective in the external environment, as well as leadership at the top, middle, and lower levels inside organizations. Students will be able to perform analysis of the dark side of leadership, destructive patterns of leadership behavior, and multiple intelligences. Furthermore, students will be able to understand the psychology of leadership, including the role of personality, employee motivation, and dealing with difficult people, importance of ethics, empowerment of employees, managing diversity in the work culture, the theory of creating a powerful vision, helping employee through change and burnout prevention, leadership in negotiation and alliances, leading and developing teams, and understand professional performance and sustaining discipline. By the end of the course, students will be able to effectively diagnose the complex dynamics of leadership, provide execution for organizational success, use effective theory, alignment, prioritization, in organizational environments and take action as leaders to improve individual, organization performance, and profitability.

MGT 06530: Sustainable Commerce 3 s.h.
Prerequisites: Must be enrolled in a graduate program in the Rohrer College of Business; may be waived by the chair of Management and Entrepreneurship.
Students will examine the notion of "sustainable business" in this course. Students will learn about different types of 'green' and sustainable businesses and evaluate many case studies of businesses that have been successful in improving their environmental and social performance while also remaining profitable. Students will gain an understanding of social venturing and continue to develop their entrepreneurial skillsets and mindsets. Students will develop their own approaches to evaluating the sustainability of a business while also learning about emerging norms and frameworks. Students will examine sustainability as a concept impacting all aspects of a business, from operations and product design to finance, marketing, and human resources management. The impacts of "green" industries, products, and business practices are also examined. This course may be offered online.

MGT 06531: SUSTAINABILITY ASSESSMENT 3 s.h.
Must be enrolled in a graduate program in the Rohrer College of Business; this requirement may be waived by the chair of Dept. of Management and Entrepreneurship.
Students will learn different approaches for setting sustainability goals, measuring progress towards sustainability outcomes, and managing so-called "sustainability transitions". Students will learn about the increasingly important role of sustainability officers in different firms, and gain exposure to concepts and practices in sustainability reporting for both shareholder, regulatory, and scientific purposes. This course may be offered online. Students will learn different approaches for setting sustainability goals, measuring progress towards sustainability outcomes, and managing so-called "sustainability transitions". Students will learn about the increasingly important role of sustainability officers in different firms, and gain exposure to concepts and practices in sustainability reporting for both shareholder, regulatory, and scientific purposes. This course may be offered online.

MGT 06532: Topics in Sustainability Innovation and Problem Solving 3 s.h.
Prerequisite: Enrolled in College of Business graduate program
Students in this seminar/practicum type class will study the implementation of sustainability transitions, in the context of current events and emerging ideas related to sustainability studies. Students will identify industries and/or societal challenges that could benefit from sustainability thinking and develop plans for implementing a new product, system, or structure. This course may not be offered every year. This course may be offered online.

MGT 06555: Personal Leadership 3 s.h.
Prerequisite: Graduate Standing
The emphasis of this new course will be on developing core leadership principles and their application in a leadership context. Particular emphasis will be on the conceptualization of personal leadership development, developing personal strategies and planning, developing personal leadership theory, developing personal leadership decision making process, developing personal motivation, developing personal empowerment, developing personal leadership change process, developing personal leadership coaching, developing personal leadership governance and implementation, and effectively and efficiently lead organizations or industry.

MGT 06567: Responsible Leadership: Aligning the Interests of Stakeholders, Profit, & Planet 1.5 s.h.
This course prepares leaders to act as responsible leaders, and understand responsible leadership as successful stakeholder alignment. The objective of this course is to familiarize students with the challenges and opportunities of responsible leadership. In this course, students will discuss the challenges of leading in a responsible and sustainable manner and examine the relationships between successful businesses, sustainability, ethics and positive societal impact. Students will learn how businesses can create long-term value by considering how organizations operate holistically in ecological, social and economic contexts.

MGT 06599: Special Topics In Management 3 s.h.
Students will study advanced level topics in management. The exact topics to be covered will change over time. Contact the MBA office or Management and MIS Department for details.

MGT 06601: Strategic Planning For Operating Managers 3 s.h.
This course prepares the operating manager for the responsibilities of performing strategic planning. The course will identify what goes into and how strategic planning is performed. Strategy formation and evaluation will be assisted by computer decision models and management games. The interrelationships of organizational units and pro-active management posture with respect to environmental forces will be stressed. This course may not be offered annually.

MGT 06603: Process Analytics 3 s.h.
Prerequisite: Admission to the MBA program and MKT 09575
This course introduces the fundamental Lean Six Sigma principles that underlay modern continuous improvement approaches for industry, government and other organizations. Process analytics introduces a different domain of quantitative analytics in understanding, improving, and creating processes, and it is critical for managers and business professionals to use the knowledge and tools to create competitive advantage. This course covers fundamental and applied knowledge on process analytics – including process data acquisition, analysis, matching and models in modern process analytics.

MGT 06629: Managing Organizational Strategy 3 s.h.
Prerequisites: Completion or Concurrent with Financial Decision Making (FIN 04500) AND Designing, Developing and Leading High Performances Organizations (MGT 06500), International Business and Society (MGT 06502), AND Marketing Management (MKT 09500) OR Permissions of Instructor.
As understanding organizations in the context of their general and competitive environments is vital, future managers must learn how to utilize the perspectives and frameworks designed for strategic analyses and decision making. In this course students will learn how to conduct analyses across organizational functions and levels and effectively manage goals and strategies for different types of organizations.

MGT 06666: Managing Engineering Teams 3 s.h.
Prerequisite: Admission to the Master of Engineering Management Program
Teamwork is increasingly important to engineering success. In this course, students will learn how to foster the development of effective of teams, using diversity management, integrative bargaining, career management, and other methods.

MGT 06677: Management Skills For Engineers 3 s.h.
Prerequisite: Admission to the Master of Engineering Management Program
Technical skills are necessary but insufficient for success in engineering management. It is also necessary for enginerring managers to be effective motivators and leaders. In this course, students will also learn optimal techniques of hiring and rewarding engineers.

MGT 07500: Prospective Analytics 3 s.h.
Prerequisite: Admission to the MBA program
Students in this course will learn knowledge and methods for prescriptive analytics that include optimization, decision-analysis, and simulation. These techniques and knowledge can be applied not only to improvement of operations but also healthcare and service industries. Prescriptive analytics is essential in guiding managers and business professionals to understand current and future situations and to derive concrete decision alternatives from the business data. Using a fundamental and applied methods in prescriptive analytics, the course charts a course for moving forward on the horizon of the immediate and long-term future.

MGT 07510: Quality Analytics 3 s.h.
This course builds a thorough understanding of how our processes and products can be continually improved through organization-wide quality management. The course will cover customers, outputs, processes, inputs, stake and stock holders, and decision making functions as they relate to enhancing the vitality of organizations to make them customer focused. The focus is on developing and implementing "soft" and "hard" tools to deliver the "best net value" to customers. In this course, students will investigate the aspects of forming organizational alliances and consensus thinking; deriving functional synergies; using quality analytics such as Six Sigma, Design of Experiment, Control Charts, etc.; developing customer orientation, facilitating teamwork, and getting a real-world perspective.

MGT 07550: Operations Analytics 3 s.h.
Pre-requisites: MBA Foundation Courses
Operations is one of three pillars of business along with Marketing and Finance. This course will cover fundamentals of Operations Analytics for various issues encountered in the real-world business operations to create values for customers and organizations. The essential operations topics include forecasting strategies, inventory control and management, capacity planning, project management, analyses of business processes, quality control and management, and other relevant and contemporaneous topics. The objective is to equip our graduate students with the adequate knowledge of applying operations analytics to dynamic and competitive business environments.

MGT 07600: Predictive Analytics 3 s.h.
Prerequisite: Admission to the MBA program or CAGS in Management
This course is designed to acquaint the graduate student with the advanced statistical forecasting techniques. Upon completion of the course, the student should be able to identify a forecasting problem, gather data and use computerized statistical packages to obtain solutions, analyze results, determine the validity and reliability of the model, and if necessary, recommend alternative methods to solve the model. This course may not be offered annually.

MGT 07601: Six Sigma 3 s.h.
Prerequisite: MGT 07500
As an improvement methodology that reduces product waste or service failure rates to near perfection, Six Sigma utilizes a disciplined, data-driven approach. Six Sigma practitioners use data to monitor, control, and improve operational performance by eliminating and preventing defects in products and associated processes, including management, service delivery, design, production and customer satisfaction. Lean Six Sigma helps eliminate not only product defects, but six other forms of waste. This course will give a complete overview of the Six Sigma process and prepare students for its management and methodology/

MGT 98242: Legal Environment of Business 3 s.h.
Students in this course examine the legal process and the legal environment within which business must operate, as well as the interrelationship of government and business. Students develop an understanding of the methods by which legal decisions are formulated as they affect both individual rights and business transactions.

BUS 01303: Business Practicum 3 s.h.

BUS 01401: Issues in Business: Directed Research (WI) 3 s.h.
Pre-reqs: COMP 01.111, COMP 01112, BUS 01.101COLLEGE COMP 1 & 2 AND BUSINESS PERSPECTIVESOPEN ONLY TO LIBERAL STUDIES: HUMANITIES AND SOCIAL SCIENCEMAJORS
An upper-division course for students in Liberal Studies: Humanities & Social Sciences, Sequence B Perspectives of Business, Issues in Business: Directed Research is a course that focuses on the current issues and trends in business as found in the business media. The course is designed to allow students to explore areas of personal interest through the collection of research and the presentation of such material in written and spoken formats.

MIS 02150: Integrated Business Software Tools-RS 3 s.h.
Students will expand their use of integrated software tools that include database management systems, spreadsheets, and other business applications. They will apply these tools to actual business decision-making situations by means of case studies and research projects.

MIS 02234: Management Information Systems 3 s.h.
Information systems are an integral part of all business activities and careers. This course is designed to introduce students to contemporary information systems and demonstrate how these systems are used throughout organizations. This course focuses on the key components of information systems - organizations, people, software, hardware, data, and telecommunications - and how these components can be integrated and managed to create competitive advantage. Students will gain hands-on experience with business software tools commonly applied to business data analysis and database management. It is expected that students entering this class have completed College Algebra or its equivalent.

MIS 02338: Design Of Database Systems 3 s.h.
Prerequisite: Junior standing and enrollment in MIS Major or MIS Minor or CUGS Business Analytics or CUGS Information Systems
This course covers the principles, practices, design, and development of database management systems (DBMS). More specifically, it focuses on logical modeling, physical data modeling, normalization, and database query languages. This course provides students with hands-on experience of designing, creating, and querying relational databases using a relational database management system (RDBMS) with emphasis on Structured Query Language (SQL) for data access and manipulation.

MIS 02500: Issues In Management Information Systems 3 s.h.
Prerequisite: Admission to the MBA Program oradmission to the COGS in Business oradmission to the COGS in MIS
Information technology and systems are pervasive in business today and will become more so in the future. Therefore, this course is designed to provide skills for managing this changing environment. The primary focus of the course is on the management of technology. The management of technology and systems is not left solely to information systems professionals; it is the responsibility of all managers.

MIS 02501: Information Systems for Managers 1.5 s.h.
Information systems and technology are pervasive in business today. This course is designed to improve students' understanding of information systems and technology resources as well as learning how these critical resources should be optimally deployed to achieve an organization's strategic objectives. The primary focus of the course is the strategic and managerial applications of technology, which is not left solely to technical specialists; it is the responsibility of all managers.

MIS 02510: EXPERT SYS BUSINESS 3 s.h.

MIS 02511: ERP Systems For Management 3 s.h.
Prerequisites: Admission to MBA, COGS in MIS, or CAGS in MIS programs
Students will learn the various key business processes, the role of enterprise resource planning systems (ERPs) in integrating and supporting these processes, and the many challenges an organization faces during implementation and management of such systems. There will be hands-on computer laboratory exercises where students will gain experience in executing the key business steps and extracting meaningful information about the business processes using a well-regarded ERP software solution.

MIS 02515: Electronic Commerce 3 s.h.
Prerequisite: Admission to the MBA Program or Admission to Certificate of Graduate Study (COGS) in MIS or Admission to Certificate of Advanced Graduate Study (CAGS) in MIS
This course will introduce students to electronic business. It will cover such diverse issues as: e-commerce payment mechanisms, encryption and authentication of data, web assurance, electronic data interchange, legal issues on the web, and web marketing. There will also be a lab component that will provide students with exposure to and practice in web page design and creation.

MIS 02522: Systems Analysis And Design 3 s.h.
Prerequisites: Admission to the MBA Program OR Admission to Certificate of Graduate Study (COGS) in MIS OR Admission to Certificate of Advanced Graduate Study (CAGS) in MIS
This course explains the methodology and techniques in analysis and design of computer information systems. The systems analyst, the architect of information systems, is a liaison between user and programmer. The roles and responsibilities of the systems analyst are emphasized at all stages of the systems development life cycle.

MIS 02525: Project Management 3 s.h.
Prerequisites: Admission to the MBA Program OR Admission to Certificate of Graduate Study (COGS) in MIS OR Admission to Certificate of Advanced Graduate Study (CAGS) in MIS
In this course, students will learn the Project Management Body of Knowledge (PMBOK) as put forward by the professional association, the Project Management Institute (PMI). Students will not only study the various phases and documents of project management, they will also have experience creating each of the documents for a given project.

MIS 02526: Project Management For Engineers 3 s.h.
In this course, students will learn the Project Management Body of Knowledge (PMBOK) as put forward by the professional association, the Project Management Institute (PMI). Students will not only study the various phases and documents of project management, they will also have experience creating each of the documents for a given project.

MIS 02528: Business Application Design And Development 3 s.h.
Prerequisites: Admission to MBA, COGS in MIS, or CAGS in MIS programs
Students will design, create, and maintain web applications that: dynamically display content from relational and hierarchical databases, provide transaction processing from procurement to fulfillment, connect to and share internal data with supply chain partners (extranet), afford ubiquitous access to internal data via secure channels (intranet). Students will gain experience working with integrated software development tools, various programming languages, and many web-based business standards.

MIS 02530: Information Security for Managers 3 s.h.
Prerequisite(s): Admission to graduate program in business or MS in Cybersecurity
This course is designed to provide students an overview of the strategies and skills required to develop and manage an Information Security Program. The course focuses primarily on information security governance, program development and management, incident management and risk management. Students will gain the skills needed to establish information security strategies, build and manage an information security program, prepare for and respond to security incidents and business continuity planning.

MIS 02538: Database Design 3 s.h.
Prerequisites: Admission to the MS in Bioinformatics, MBA, COGS in MIS, or CAGS in MIS programs
This course explores the fundamentals of designing a database. It emphasizes the relational model; however, the course also explores the hierarchical and network models. Additionally, the course covers such topics as data insertion, modification, and extraction using SQL. CASE tools and database management tools will be employed.

MIS 02540: Data Warehousing & Business Intelligence 3 s.h.
Prerequisite: MIS 02538
This course covers the concepts, principles, and tools of data warehousing technology as a component and function of Business Intelligence. It explores how to solve business problems by using an organization's data to gain new insights into its operations. Additionally, it introduces the approaches, roles, and responsibilities associated with the design and implementation of a data warehouse. This course leverages a portfolio of SQL Server tools for hands-on experience in implementing a solution through assignments, lab exercises, and projects.

MIS 02599: Special Topics In Management Information Systems 3 s.h.
Prerequisite(s): Admission to the MBA Program or Admission to Certificate of Graduate Study (COGS) in MIS or Admission to Certificate of Advanced Graduate Study (CAGS) in MIS
Students will study advanced level topics in Management Information Systems. The exact topics to be covered will change over time. Contact the MBA office or the Management and MIS Department for details.

MKT 09200: Principles Of Marketing 3 s.h.
Prerequisite(s): COMP 01105 or COMP 01111 and 12 Credits completed
This course provides an overview of the theory and practice of marketing within a corporate and societal context in a dynamic environment. The major functions of marketing are covered from the perspective of management strategy seeking competitive advantage.

MKT 09375: Business Logistics 3 s.h.
Prerequisite(s): MKT 09200 and Junior status orC918 Systems Engineering Concentration.
This course focuses on the logistics of physical distribution and supply chains. Topics include traffic routing, inventory analysis and control, warehousing, location of production and storage facilities, and transportation.

MKT 09379: International Marketing 3 s.h.
Prerequisites: MKT 09200 with a minimum grade of C- and Junior status
Basic marketing concepts as they relate to foreign markets are analyzed in depth in this course. Two approaches are used: the environmental approach introduces the setting in which international marketing takes place; and the managerial approach incorporates marketing strategies of firms that choose to venture abroad.

MKT 09500: Marketing Management 3 s.h.
Prerequisite: MBA Foundation Courses
This course focuses on managing the marketing function in a dynamic, competitive environment in coordination with other organizational functions to enhance the overall performance of an organization. Attention will be devoted to the design of strategies for the achievement of competitive advantage in product/service offerings, pricing, promotion and distribution. Students will build upon their existing knowledge base of marketing concepts and will develop or extend competencies in analytical decision-making, ability to identify market opportunities, and ability to develop and evaluate marketing plans.

MKT 09501: Consumer Analysis 3 s.h.
Students will conduct detailed analyses of consumer and/or business markets. After examining a range of conceptual materials and research methodologies, they will apply these insights to the analysis of actual decision-making situations by means of case studies and/or independent research projects.

MKT 09502: Marketing Research 3 s.h.
Contemporary marketing decisions are based on marketing research information. This course will help students develop a managerial perspective on the use of marketing research information in making decisions, as well as specific research skills and practical experiences that will enhance their career advancement. The skills covered in this course are applicable to marketing problems encountered in both consumer and business-to-business markets. Students will experience a "project-based learning" to apply marketing research tools and methods to identify and solve specific marketing problems.

MKT 09503: Marketing Communication And Promotion 3 s.h.

MKT 09510: Foundations of Marketing 3 s.h.
Prerequisite(s): Admission into the MBA or Business COGS program
For graduate students in the MBA or Business COGS programs, this course provides a foundational overview of the theory and practice of marketing within a corporate and societal context in a dynamic environment. The major functions of marketing are covered from the perspective of management strategy seeking competitive advantage by better serving customers' needs more effectively and profitably than competitors.

MKT 09511: Marketing Management Fundamentals 1.5 s.h.
Focusing on the coordination of the marketing function with other organizational functions within an organization, the course provides a broad overview of the management of the marketing function and the creation of marketing strategies intended to create and maintain competitive advantage.

MKT 09575: Introduction To Logistics And Supply Chain Management 3 s.h.
Prerequisite: Admission to graduate programs
The course is a basic introduction to the field of logistics and supply chain management, including both defense logistics and commercial supply chain management. The objective of the course is to provide students a solid awareness and understanding of the processes and functions that comprise a supply chain. The course serves as the introductory course of a three course specialization in Supply Chains and Logistical Systems in the MBA program. Moreover, students are required to complete a term project to demonstrate their understanding of logistics and supply chain issues. Case analysis and hands-on experience in this class will offer students the opportunity to broaden their horizon on the critical roles that the supply chain plays in this globalized and interdependent world.

MKT 09599: Special Topics In Marketing 3 s.h.
Prerequisites: Admission to the MBA Program
Students will study advanced-level topics in Marketing. The exact topics to be covered will change over time. Contact teh MBA office or the Marketing Department for details.

MKT 09600: International Marketing 3 s.h.
Students will examine all issues facing marketing managers in the light of the unique challenges posed by the internationalization of the economy. The cultural, economic, political, and legal environment will be examined. Market research in world markets, the planning and development of consumer and industrial products, promotion, pricing and distribution will also be analyzed. This course may not be offered annually.

MKT 09605: Competitive Advantage Through Supply Chain Management 3 s.h.
Prerequisite: MGT 09575
This course is designed to educate students how to leverage supply chain management strategies to help a business improve and maintain its competitiveness. This course covers the fundamentals of supply chain strategy, issues, and challenges. Additional topics covered include logistics networks, forecasting, inventory management, supply contracts, strategic alliances, supply chain integration and design, procurement and outsourcing, customer value and international issues. Case studies are used in conjunction with a supply chain simulation to illustrate the concepts covered in lectures.

SCL 01380: Global Supply Chain 3 s.h.
Prerequisite: MKT 09375
The course is designed to assist students in developing the analytical skills necessary to manage the processes and functions existent in modern global supply chains. Using the case method and recommended textbook, students will analyze realistic situations and problems confronting supply chain managers in a global setting. They will also identify solutions and develop implementation plans for their recommended solutions. Within this process, students will develop an acceptance, understanding, and appreciation of the economic, political, and cultural differences that make up a global market. Cases for analysis and discussion will include topics such as supply chain strategy, operations management, inventory management, lean systems and six sigma quality issues, and sustainability supply chain management.

SCL 01620: ANALYTICS FOR SUP CHAIN MGMT 3 s.h.
Prerequisite(s): Admission to a Graduate Business Program
Given the increasing availability of data in today's business environment, integrating it into decision-making is critical for increasing efficiency and profit generation. This course introduces students to the analytical techniques such as optimization modeling, which enables them to make performance recommendations and investigate what-if scenarios in business problems. This course focuses on several critical supply chain functions and teaches students how to effectively understand and analyze data that may be available to them in the supply chain.

MATH 01122: Precalculus Mathematics 4 s.h.
Prerequisites: Old SAT score of 550+ or New SAT score of 570+ or ACT score of 24+ or Elem Algebra score of 77+ or AAF score of 263+ or "S" in MATH 01095
This course helps prepare students for Calculus I or Calculus T&A. The contents include: a brief review of intermediate algebra, the structure of the real number system, elementary analytic geometry, and algebraic, exponential, logarithmic and trigonometric functions (including their inverses and related functions). Graphs of functions and conic sections also are studied. A graphing calculator is required. Students are expected to have completed an equivalent of Basic Algebra II.

MATH 01130: Calculus I 4 s.h.
Prerequisites: C- or better in MATH 01122 or (MATH 01124 and MATH 01125) or (MATH 03125 and MATH 01125)or CLM score of 60+ or AAF score of 276+ or Old SAT score of 600+ or New SAT score of 620+ or ACT 27+
Calculus is a subject about functions. This course deals primarily with the two most fundamental concepts in Calculus: derivatives and definite integrals. It begins with a discussion of notions of the limit and continuity of a function. Then the definition of a derivative is introduced, and techniques of computing derivatives are studied. Through applications to analysis of functions, optimizations and problems in sciences, a student can appreciate the importance of the derivative. The concept of a definite integral as a limit of approximating sums emerges naturally in the context of problems of areas. Hidden links between the two concepts are formulated in the Fundamental Theorems of Calculus, which also provide a convenient shortcut for computing definite integrals. A graphing calculator is required for this course, and so is the use of computer software, such as Mathematica.

MATH 01131: Calculus II 4 s.h.
Prerequisites: C- or better in MATH 01130
This course begins with applications of integration (such as volume of a solid of revolution work, arc length, area of a surface of revolution, center of mass) and derivatives of inverse trigonometric functions. Integration by parts, partial fractions and other more advanced integration techniques are introduced, along with a discussion of numerical integration, improper integrals, indeterminate form, sequences and infinite series. A graphing calculator is required for this course, and so is the use of computer software, such as Mathematica.

MATH 01205: Technological Tools for Discovering Mathematics 2 s.h.
Prerequisites: C- or better in each of CS 01104 and MATH 01131 and MATH 03150
This course will use mathematics-specific technologies to help students discover mathematics and to develop a better understanding of new content. Throughout the course students will become aware of the broad range of mathematics-specific technologies available to mathematicians, become proficient in the use of these, and pursue the advantages, disadvantages, and limitations of such technologies. Students will solve problems and advance their understanding of topics in the areas of pre-calculus, calculus, geometry and statistics.

MATH 01210: Linear Algebra 3 s.h.
Prerequisite: C- or better in MATH 01131
This course includes: linear equations and matrices, vector spaces, linear dependence and independence, dimension and basis of a vector space, linear transformations, inner product and cross product, orthogonality, eigenvalues and eigenvectors. Use of graphing calculators is required and computers may be used at the option of the instructor. It is recommended that MATH 03150 or MATH 03160 should be taken prior to this course.

MATH 01230: Calculus III 4 s.h.
Prerequisites: C- or better in MATH 01131
This course includes: vectors, vector functions, velocity, acceleration, partial differentiation, directional derivatives, multiple integration, and vector calculus. The student is expected to use computer software, such as Mathematica, in addition to the graphing calculator.

MATH 01231: Ordinary Differential Equations 3 s.h.
Prerequisites: C- or better in both MATH 01210 and MATH 01230
Applications of ordinary differential equations and their methods of solution form the major part of this course. It also includes the solution of nth order equations, particularly of first and higher degree linear differential equations, and series and Laplace Transform solutions. Students might be asked to use computers and/or graphics calculators as an aid in solving equations.

MATH 01310: College Geometry 4 s.h.
Prerequisites: C- or better in each of PHIL 09130 and MATH 01210 and MATH 01230 and MATH 03150
This geometry course will use both synthetic and analytic approaches to study advanced concepts in Euclidean geometry, to introduce non-Euclidean geometry, to explore the basics of Transformational geometry and Higher Dimensional geometry, and to trace the historical development of geometry. Computer use will be emphasized throughout the course.

MATH 01330: Introduction to Real Analysis I 3 s.h.
Prerequisites: C- or better in both MATH 01230 and MATH 03150
This course prepares students for more advanced courses in analysis as well as introducing rigorous mathematical thought processes. Topics included are sets, functions, the real number system, sequences, limits, continuity and derivatives.

MATH 01331: Introduction to Real Analysis II 3 s.h.
Prerequisites: C- or better in MATH 01330
This course is a continuation of Introduction to Real Analysis I. The purpose is to extend student's understanding of basic analysis and the calculus. Topics included are: the mean-value theorem, existence of the Riemann integral, Riemann-Stieltjes integration, infinite series, convergence tests and Fourier series.

MATH 01332: Numerical Analysis 3 s.h.
Prerequisites: C- or better in each of (CS 01104 or CS 04103 or CS 04113) and MATH 01131 and (MATH 01210 or MATH 01235)
This course includes: elements of error analysis, real roots of an equation, polynomial approximation by finite difference and least square methods, interpolation, quadrature, numerical solution of ordinary differential equations, and numerical solutions of systems of linear equations. The student should expect to program a computer in addition to using a graphing calculator.

MATH 01340: Modern Algebra I 3 s.h.
Prerequisites: C- or better in each of MATH 03150 and MATH 01210 and PHIL 09130
This course includes: the natural numbers, integers, rationals, and reals as mathematical systems, and the introductory theory of groups, rings, integral domains, and fields. Also included are homomorphisms and isomorphisms, subgroups, kernels, rings and ideals and polynomial rings. At the option of the instructor, computer use can be required.

MATH 01341: Modern Algebra II 3 s.h.
Prerequisites: C- or better in MATH 01340
This course extends the study begun in Modern Algebra I to a more detailed investigation of abstract algebraic structures. Included are Sylow theorems, rings and ideals, polynomial rings, ring and field extension and Galois theory.

MATH 01352: Theory of Numbers 3 s.h.
Prerequisite: C- or better in both MATH 01210 and MATH 03150, or C- or better in both MATH 01210 and MATH 03160
This course includes divisibility properties of integers, theory of congruence, Diophantine Analysis, congruences of higher degree, quadratic residues and famous problems of number theory.

MATH 01354: Introduction to Topology 3 s.h.
Prerequisites: C- or better in MATH 01330
This course covers the properties of general topological spaces, separation, compactness, connectedness and the Heine-Borel and Bolzano-Weierstrass theorems.

MATH 01386: Introduction to Partial Differential Equations 3 s.h.
Prerequisites: C- or better in MATH 01231 and MATH 01210) or MATH 01235
This course is a study of partial differential equations and their applications. Topics include the derivation of the wave equation, Laplace's equation and the heat equation, Fourier series and integrals, boundary value problems, Bessel functions and Legendre Polynomials.

MATH 01410: History of Mathematics 3 s.h.
Prerequisites: C- or better in two 300-level (or higher) Math major courses
This course includes a survey of the development of mathematical ideas from early times up to present day college mathematics. Emphasis is on historical mathematical problems and their solution. Readings and reports on selected topics are required.

MATH 01421: Mathematics Field Experience 3 s.h.
Prerequisites: MATH 01131 and STAT 02360 and permission of instructor
Students accept assigned projects in a professional environment. These projects normally involve applied mathematics or statistics. Students are expected to work at least 150 hours during the semester for which they receive credit. Written reports are required.

MATH 01430: Introduction to Complex Analysis 3 s.h.
Prerequisites: C- or better in MATH 01330
This course includes properties of complex numbers and their conjugates, functions of a complex variable, limits, continuity and derivatives for complex functions. Also included are: Integration and the Cauchy integral theorems, uniform convergence, Taylor's and Laurent's series and conformal mapping.

MATH 01498: Math Seminar (WI) 3 s.h.
Prerequisite(s): Senior standing and C- or better in STAT 02320 and MATH 01340 and MATH 01231 and MATH 01330or (STAT 02360 and STAT 02361)
This course is designed to integrate students' knowledge of mathematics and to further develop their problem solving abilities. The course content includes problem-solving techniques, a review of the literature of mathematics, solving problems drawn from a variety of current resources, and study of techniques of proof and issues in the philosophy of mathematics and its foundation. Additionally, each student is required to write and to present orally, a research report on a mathematical topic.

MATH 01500: Foundations Of Mathematics 3 s.h.
Strategies and tools for problem solving, including computer use, will be applied to specific problems from number theory, geometry, analytic geometry, algebra, discrete mathematics, logic, and calculus.

MATH 01502: Linear Algebra and Matrix Theory 3 s.h.
This course includes linear systems, linear dependence and independence, linear transformation theory, multilinear forms, matrices, determinants, inner product spaces.

MATH 01503: Number Theory 3 s.h.
This course includes divisibility properties of integers, mathematical induction, modular congruence, linear congruences and diophantine analysis, congruences of higher degree, quadratic residues, famous problems of number theory.

MATH 01504: Introduction To Mathematical Logic 3 s.h.
This course includes intuitive set theory, relations and functions, sentential calculus, predicate calculus, mathematical systems, axiomatic theories.

MATH 01505: Probability and Mathematical Statistics I 3 s.h.
This course is an introduction to the theory and application of probability and mathematical statistics. After a brief introduction to the concepts of descriptive and inferential statistics, the emphasis is on probability theory and its applications. Topics covered include introduction to probability theory, transformations and expectations, common families of discrete and continuous distributions, multivariate distributions and properties of a random sample.

MATH 01506: Probability and Mathematical Statistics II 3 s.h.
Prerequisites: MATH 01505
This course provides a solid foundation in statistical inference. Knowledge of probability theory will be assumed. Topics include principles of data reduction, methods of finding tests, point estimators,and testing of statistical hypotheses. Finally, computer simulations will be used to corroborate many of the important concepts.

MATH 01507: Differential Geometry 3 s.h.
This course explores the application of calculus towards the study of higher-dimensional surfaces and their geometry. Topics include geodesics, tangent space, directional derivative, Riemannian metrics, isometrics, Gaussian curvature, first and second fundamental forms, Gauss-Bonnet Theorem, minimal surfaces, differential manifolds, connections, and Riemannian curvature tensors. Special topics (at the discretion of the instructor) may include Lie groups, symmetric spaces, general relativity, cohomology, and complex geometry. Students will be required to use a computer algebra system to gain geometric intuition.

MATH 01510: Real Analysis I 3 s.h.
The theoretical treatment of the foundations of calculus covering the real and complex number systems, elementary set theory, number sequences and series, topological treatment of the real line, continuity and differentiation.

MATH 01511: Real Analysis II 3 s.h.
The continuation of Real Analysis I covering Riemann-Stieltjes integration, sequences and series of function, functions of several variables, elements of measure theory and Lebesgue integration.

MATH 01512: Complex Analysis I 3 s.h.
The elementary theory of the functions of a complex variable covering operations with complex numbers, graphing on the Argand-Gauss-Wessel plane, analytic functions, complex integration. Cauchy's theorem and its applications, poles and residues, power series and conformal mapping are studied.

MATH 01513: Complex Analysis II 3 s.h.
The continuation of Complex Analysis I covering Riemann-Stieltjes integration, meromorphic functions, conformal mappings, analytic continuation, fractional linear transformations and periodic functions.

MATH 01515: Engineering Applications Of Analysis 3 s.h.
This course will cover various techniques for solving linear and nonlinear partial differential equations (PDEs) arising from physical and engineering applications; this includes both analytical and numerical methods. More specifically, students will learn the method of separation of variables for solving multi-dimensional problems, Fourier/Laplace transforms for solving infinite-domain problems, numerical methods (finite-difference, finite-element, Monte-Carlo), Green's functions, method of characteristics, and inverse scattering. Basic applications include a vibrating membrane (wave equation), heat flow along a metal plate (heat equation), steady-state fluid flow (Laplace's equation), traffic flow (shock waves), and solitary waves (solitons). Students will be required to use a computer algebra system, e.g. Mathematica, to solve problems.

MATH 01520: Topics In Applied Mathematics 3 s.h.
This course provides an overview of the mathematical modeling process and includes applications to optimization, dynamical systems, and Stochastic processes. Models of specific real world systems will be developed and studied using analytical and numerical methods.

MATH 01521: Nonlinear Differential Equations 3 s.h.
This course examines analytic and computer methods for the solution of ordinary differential equations which are of interest in applications. Topics are selected from differential equations in the phase plane, geometrical and computational aspects of the phase plane, averaging methods, perturbation methods, stability, Liapunov methods, existence of periodic solutions, bifurcations and chaos. Applications are also included that are of use in science and engineering.

MATH 01522: History Of Mathematics 3 s.h.
Topics will include: Babylonian, Egyptian and Greek mathematics. Attention will be given to the development of trigonometry, algebra, analytic geometry and the calculus.

MATH 01523: Selected Topics In Mathematics 1 to 6 s.h.
This course provides students with the opportunity to explore current issues in mathematics. The course will have a changing focus that will permit faculty to offer specialized seminars focused on new developments in the field, issues of significance, areas of faculty research, or in response to students' requests. Students may take this course for credit more than once (limit: 9 s.h.), as long as the focus of the course is different each time the student enrolls.

MATH 01524: Abstract Algebra I 3 s.h.
This introduction of abstract algebra will include the construction of number systems, theory of groups, rings, integral domains and fields.

MATH 01525: Modern Geometry 3 s.h.
This course provides an overview of the field of geometry by studying selected geometries in depth, both Euclidian and non-Euclidian. Indicative exploration and the axiomatic method, as well as synthetic and algebraic approaches to problems, are examined. Unless recommended by the adviser, this course should not be chosen if a similar course has been part of the student's undergraduate program.

MATH 01526: Point Set Topology 3 s.h.
An introduction to one of the major branches of modern mathematics covering axiomatic development of topological spaces and metric spaces, and the concepts of convergence, continuity, separation, compactness and connectedness.

MATH 01527: Abstract Algebra II 3 s.h.
The continuation of Abstract Algebra I covering advanced material from group theory, ring theory and field theory.

MATH 01528: Mathematical Modeling & Algebraic Reasoning 3 s.h.
Students in this course will learn about polynomial, rational, and exponential functions by building and analyzing mathematical models for a variety of situations. Using algebraic representations, problem solving, using technology, connecting abstract algebra with middle grades mathematics, and fluency with algebraic procedures will be stressed.

MATH 01529: Numerical Analysis 3 s.h.
This course examines the theoretical foundations of numerical methods and studies in detail existing numerical methods for solving many standard mathematical problems in analysis and algebra. Error analysis will be developed for all methods. Some recent advances in the theory of chaos and nonlinear dynamics will also be presented.

MATH 01533: Graduate Seminar In Mathematics 3 s.h.
Students will be introduced to mathematics not found in textbooks. They will learn how to read journal articles and analyze them. An emphasis will be placed on communication skills, both oral and written. Students will be required to give both oral and written analysis of their readings.

MATH 01550: Independent Study 1 to 6 s.h.
This course is designed for an individual who wishes to study a mathematical subject or topic not included in the listed offerings of the program. The student undertakes independent study under the supervision of a mathematics staff member. Registration by permission of the department chairman and the supervising department member.

MATH 01552: HISTORY OF MATH 3 s.h.

MATH 01561: School Mathematics From An Advanced Standpoint 3 s.h.
This course is to develop a deeper understanding of mathematics and a new appreciation of its beauty, its logical structure and its applicability. The course will take into account not only the many interconnections among school mathematics topics but also their relationship to higher mathematics.

MATH 01603: Analytic Number Theory 3 s.h.
Prerequisites: MATH 01503, MATH 01512
This course covers introductory topics in analytic number theory. Topics include theory of congruence, multiplicative functions, distribution of prime and the Prime Number Theorem, subgroups of the modular group and their fundamental domains, modular forms and their Fourier series expansions.

MATH 03125: Calculus: Techniques and Applications 3 s.h.
Prerequisites: C- or better in MATH 01122 or MATH 01123 or MATH 01124 or CLM score of 60+ or AAF score of 276+ or Old SAT score of 600+ or New SAT score of 620+ or ACT 27+
This course introduces students to the fundamental concepts and techniques of differential and integral calculus. Emphasis is placed on practical and informative applications of limits, derivatives and integrals in today's world, with those in business highlighted. A graphics calculator is required. Students are expected to have completed an equivalent of the course of College Algebra.

MATH 03150: Discrete Mathematics 3 s.h.
Prerequisites: Old SAT score of 550+ or New SAT score of 570+ or ACT score of 24+ or Elem Algebra score of 77+ or QAS score of 255+ or "S" in MATH 01095
This course provides an overview of the branch of mathematics commonly known as discrete mathematics. Topics included are sets, relations, functions, induction and other methods of proof, recursion, combinatorics, graph theory, and algorithms. Emphasis is placed on the solution of problems and proofs. The use of graphing calculator is required.

MATH 03160: Discrete Structures 3 s.h.
Prerequisites: Old SAT score of 550+ or New SAT score of 570+ or ACT score of 24+ or Elem Algebra score of 77+ or QAS score of 255+ or "S" in MATH 01095
This course covers mathematical topics essential for work in computer science. This material includes number bases, mathematical induction, sets, relations, functions, congruence, recursion, combinatorics, graphs, trees, logic, Boolean algebras, and proof techniques. While this is a course in mathematics, many of the examples and applications will be taken from computer science. The instructor may require use of a graphing calculator and/or computer. This course covers much of the same material as Discrete Mathematics (MATH03.150), but with a computer science focus. In no case will a student be allowed to receive credit for both courses. Both courses will be treated as equivalent for the purposes of satisfying prerequisites and course requirements.

MATH 03400: Applications of Mathematics 3 s.h.
Prerequisites: C- or better in each of MATH 01210, MATH 01230, and MATH 01231
This course may include examples of mathematical models applied to the various fields of the biological, physical and social sciences. The process of building a mathematical model to describe a real world system will be demonstrated. Emphasis will be placed on the value of mathematical models for solving problems and obtaining new results. Computers and graphing calculators will be used.

MATH 03411: Deterministic Models in Operations Research 3 s.h.
Prerequisites: C- or better in (MATH 01230 or MATH 01141) and C- or better in (MATH 01210 or MATH 01235)
This course is an introduction to mathematical modeling, analysis, and solution procedures applicable to decision-making problems in deterministic environment. Methodologies covered include the simplex and interior point methods of solving linear programming models, inventory theory, assignment and transportation problems, dynamic programming and sensitivity analysis. Solutions will be obtained using theoretical methods and software packages.

MATH 03412: Stochastic Models in Operations Research 3 s.h.
Prerequisites: C- or better in each of STAT 02360 and MATH 03411, or C- or better in each of STAT 02360 and (MATH 01230 or MATH 01141) and (MATH 01210 or MATH 01235)
This course is an introduction to mathematical modeling, analysis, and solution procedures applicable to decision-making problems in an uncertain (stochastic) environment. Methodologies covered include dynamic programming, Markov chains, queuing theory, decision trees, system reliability and inventory theory. Solutions will be obtained using theoretical methods and software packages.

MATH 03501: Mathematical Modeling for Biological Systems 3 s.h.
Prerequisite(s): MATH 01210 or MATH 01231 or permission of instructor
This course introduces students to modeling biological systems using ordinary differential equations. It focuses on the modeling process including the construction, analysis, and interpretation of mathematical models. It introduces new techniques for studying the solutions to these mathematical models and develops precedures for making the models more realistic.

MATH 03511: Operations Research I 3 s.h.
This course is an introduction to mathematical modeling, analysis, and solution procedures applicable to decision-making problems in deterministic environment. Methodologies covered include the simplex and interior point methods of solving linear programming models, project planning, network optimization, assignment and transportation problems, dynamic programming and game theory. Solutions will be obtained using theoretical methods and software packages.

MATH 03512: Operations Research II 3 s.h.
This course is an introduction to mathematical modeling, analysis, and solution procedures applicable to decision-making problems in an uncertain (stochastic) environment. Methodologies covered include dynamic programming, simulation, Markov chains, queuing theory, decision analysis, dynamic programming, system reliability and inventory theory. Solutions will be obtained using theoretical methods and software packages.

MATH 03525: Partial Differential Equations in Biomathematics 3 s.h.
Prerequisite(s): MATH 01231 or permission of instructor.
This course covers topics in partial differential equations as it applies to biomathematics. These include second order linear and nonlinear partial differential equations, diffusion and conservation laws, waves and pattern formation, Chemotaxis and other forms of cell and organism movement. Computer software, such as Mathematica, will be used.

MATH 03550: Topics In Discrete Mathematics 3 s.h.
This course provides an advanced approach to topics in discrete mathematics for persons with substantial backgrounds in traditional mathematics. Selected topics are explored in depth and related to concepts from other areas of mathematics. Topics normally included are logic, combinatorics, number systems, data structures and representations, Boolean algebra, induction, graphs and trees.

MATH 03600: Topics In Elementary Mathematics 3 s.h.
This course is designed to improve the understanding and attitudes of practicing elementary teachers (K-8). Specific topics to be addressed include quantitative reasoning, spatial reasoning, inductive and deductive reasoning, mathematical systems, and communication in mathematics. Students are expected to engage in some independent work.

MATH 03610: Applied Statistical Epidemiology 3 s.h.
Prerequisite: MATH 01505, MATH 01502 AND CS 01104 or equivalent or Permission of Instructor
This course introduces the basic concepts of epidemiology and focuses on analyzing epidemiological data using a statistical programming language such as R, one of the most efficient programming languages for statistical computing and graphics. This course will lay the ground work to successfully design, conduct, analyze and interpret findings from epidemiological studies using the appropriate statistical methods.

MATH 03611: Special Topics in Biomathematics 3 s.h.
This course covers in depth a wide-range of advanced topics in biomathematics inspired by applications of mathematics in biology and health sciences problems. The course will offer students the opportunity to learn modern emerging cutting-edge research approaches not covered by other courses.

MATH 03612: Masters Thesis 3 s.h.
This course is a graduate Master's thesis course and will serve as capstone experience. It provides students with hands-on research experience in a topic of interest in mathematics, applied mathematics or statistics under the supervision of a faculty from the Department of Mathematics. Upon completion of the research project, the results will be presented to a Master's thesis committee for approval.

STAT 02100: Elementary Statistics 3 s.h.
This course gives a basic introduction to the fundamental concepts and methods of statistics. Its topics include: basic measures of central tendency and variability, graphical displays, elementary design of experiments, descriptive simple linear regression, elementary probability, the normal and t-distributions, confidence intervals and hypothesis testing. Use of a statistical calculator, graphing calculator or software package is required. Note: many majors require a different introductory statistics course; students should check their major requirements before signing up for this course.

STAT 02260: Statistics I 3 s.h.
Students learn to use various graphical displays and measures of location and variability to describe data. The course considers elementary probability and sampling distributions, and uses the normal and t-distributions in estimation and hypotheses testing. It includes descriptive techniques for simple linear regression and correlation. Use of a graphing calculator is required; computer software may be used. Students are expected to have completed an equivalent of College Algebra.

STAT 02280: Biometry 4 s.h.
Prerequisites: MATH 01130 and (BIOL 01106 or BIOL 01202 or MCB 01101)
This laboratory course considers elementary data analysis, probability and sampling distributions. It uses the normal and t-distributions to introduce estimation and hypotheses testing. It includes descriptive techniques and inference for simple linear regression and correlation. Analyses of variance, nonparametric tests and chi-square tests are covered in this course. Emphasis is placed on experimentation and the application of statistical methods to the biological sciences. Computer software is used regularly in data manipulation, statistical analyses, and formal presentation of results.

STAT 02290: Probability and Statistical Inference for Computing Systems 3 s.h.
Prerequisites: C- or better in each of (MATH 03150 or MATH 03160) and MATH 01131 and (CS 04113 or CS 01104 or CS 04103)
This laboratory course considers descriptive techniques for presenting and summarizing data, techniques in probability, discrete and continuous random variables, estimation and hypothesis testing. Emphasis is placed on concepts and simulation, regularly using computer software for data manipulation and presentation, function manipulation and presentation, simulation, and statistical analyses. Examples will be drawn from the field of Computer Science.

STAT 02360: Probability and Random Variables 3 s.h.
Prerequisites: C- or better in both of MATH 03150 and (MATH 01230 or MATH 01141)
This course is an introduction to the theory and application of probability and random variables, with a short introduction to mathematical statistics, as the post-calculus level. Topics covered include sample spaces, random variables, discrete and continuous probability distributions, mathematical expectation, and multivariate distributions. At the end of the course the concept of estimation, from mathematical statistics, will be introduced. A few of the concepts of descriptive statistics will be introduced as needed. Use of a graphing calculator is required.

STAT 02361: Mathematical Statistics 3 s.h.
Prerequisites: C- or better in STAT 02360
A continuation of STAT 02.360, the course emphasizes the theory of inferential statistics and its applications. The Central Limit Theorem is more fully developed as are the concepts of estimation and hypothesis testing. The properties of estimators are covered and tests using normal, t, chi-square, and F distributions are studied. Nonparametric methods, regression, and correlation are also covered. Use of a graphing calculator is required.

STAT 02371: Design of Experiments: Analysis of Variance 3 s.h.
Prerequisites: (MATH 01210 and MATH 01235) and (STAT 02260 or STAT 02280 or STAT 02284 or STAT 02286 or STAT 02290 or STAT 02320 or STAT 02361)
Students will gain an understanding of the major theoretical and practical concepts in the design of experiments using the statistical technique called the analysis of variance (ANOVA). A brief discussion of the concept of power, and the minimum number of experimental trials to achieve that power, will be used as this motivation for careful design. Students will be introduced to several aspects of the design of experiments beyond one- and two-way ANOVA, such as blocking, factorial designs, fractional designs, and random factors.

STAT 02510: Introduction to Statistical Data Analysis 3 s.h.
Prerequisites: Probability & Random Variables (STAT 02.360) or equivalent, and Linear Algebra (MATH 01.210) or equivalent.
This course examines the principles behind statistical data analysis, and introduces students to major areas of statistical data analysis needed by a practicing biomathematician. Using simulation, students will use bootstrapping to develop the mechanics of confidence intervals, use randomization to develop the mechanics of hypthesis tests, and learn the types of conclusions that can justifiably be made from a study. They will also be introduced to models of analyzing data that is categorical, numerical, and a combination of both, through the study of contingency tables, linear regression, and the analysis of variance. They will use at lease one statistical software package.

STAT 02511: Statistical Computing 3 s.h.
Prerequisite: STAT 02510
This is an introductory course in programming-based statistical software packages, such as SAS, R, Matlab, etc. Students will learn the core of ideas of programming such as objects, data structures, looping, and functions. Students will also learn how to read data from different types of files, format them appropriately and use them to perform basic statistical analyses, such as graphing and computing numerical summaries, or more advanced statistical analyses, such as one and two sample T-tests, Chi-square for comparisons of proportions, regression, non-parametric analyses, bootstrapping, and simulations.

STAT 02513: Applied Stochastic Processes 3 s.h.
Prerequisite(s): STAT 02360 and MATH 01210 or ECE 09433 or permission of instructor.
This course introduces the concept of a sequence of random events known as a stochastic process, as well as the mathematical methods used to model variety of types of stochastic processes and analyze their short and long-term behavior. A broad spectrum of examples from bilogy, health, and medicine will be included throughout the course. Topics include the basic classifications of stochastic processes, Markov chains, Poisson processes, continuous-time Markov chains, renewal processes, and branching processes. Statistical and computer algebra system software will be used when relevant.

STAT 02514: Decision Analysis 3 s.h.
Prerequisite(s): STAT 02510 or permission from instructor
This course examines the basic principles for performing a decision analysis, including those needed for decision making in areas such as medicine, the environment, and public health. Topics include the components of a decision and a model of a decision, the use of probability as a model for reasoning with uncertainty, subjective probability, utility theory, Bayesian inferential methods, sensitivity analysis, Monte Carlo simulation, and multi-objective decision problems. Professional decision analysis software will be used throughout the course.

STAT 02515: Applied Multivariate Data Analysis 3 s.h.
Prerequisite(s): Graduate standing in M.S. in Data Analytics or (MATH 01131 and MATH 01210) and (STAT 02360 and STAT 02260 or STAT 02290) or permission of the instructor.
This course examines the principles behind statistical data analysis for multivariate data, and introduces the students to major areas of multivariate I data analysis. Topics include multiple and logistic regression, principal component analysis, factor analysis, cluster analysis, MANOVA, multidimensional scaling, discriminant analysis and canonical correlation. The students will use at least one statistical software package.

STAT 02525: Design and Analysis of Experiments 3 s.h.
Prerequisite(s): Graduate standing and an introductory statistics course at at-least the 200 level, or permission of the instructor.
This is a graduate level course that investigates fundamental topics in experimentation as well as design methods. The course also introduces the analysis associated with various experiments. Examples and case studies based on real-world events will be used to illustrate course concepts. Students will be required to complete and end-to-end project that will include an experiment's design, data collection and analysis.

STAT 02530: Applied Survival Analysis 3 s.h.
Prerequisite: STAT 02510
This course provides an introduction to the methods used for the analysis of time-to-event data, such as time to first recurrence of a tumor after initial treatment (i.e. length of remission) and time to failure in mechanical systems. The topics covered include types of censoring and truncation, common nonparametric (i.e., Kaplan-Meier estimator), parametric, and semi-parametric (i.e. Cox model) approaches, model checking methods, reliability topics (homogeneous Poisson process), sample size, and power estimation. While the theoretical basis for the methodology will be discussed, the primary focus of the course will be on model selection, data analysis, and interpretation of results. Extensive use of statistical software will be incorporated into the course.

STAT 02585: Introduction to Bayesian Statistical Methods 3 s.h.
Prerequisite: STAT 02510
This course provides an introduction to statistics from a Bayesian perspective in which one's inferences about parameters or hypotheses are updated as evidence accumulates. The course will focus on Bayesian methods for inference and how these methods compare with commonly-taught Frequentist approach. Benefits of the Bayesian approach will also be discussed. Methods learned will be applied in the analyses of various practical problems using a statistical programming language such as R or SAS.

ENGR 01512: Principles Of Nanotechnology 3 s.h.
Prerequisites: (PHYS 02200 or PHYS 00220) and (PHYS 02201 or PHYS 00222) and CHEM 06100
This course explores the science and engineering at the nanometer scales. Topics include fundamentals of nanotechnology; types and properties of nanomaterials; methods of fabrication; how these materials are characterized and the potential applications.

ME 10501: Computer Integrated Manufacturing and Automation 3 s.h.
The course covers the basic aspects of computer integrated manufacturing and automation systems. Hard and flexible automation concepts are introduced. Various automation strategies are presented. Coding and classification ideas of group technology are related to computer aided process planning. Topics of numerical control, industrial robotics, and artificial intelligence are discussed.

ME 10505: Special Topics in Mechanical Engineering 3 to 6 s.h.
The topics will be announced in the course schedule.

ME 10506: Computational Materials Science 3 s.h.

ME 10511: Combustion 3 s.h.
This course presents the concepts of chemically reacting systems (flames) along with many practical applications. Topics include chemical equilibrium, chemical kinetics, premixed laminar flames, detonations, diffusion flames and environmental issues. The course uses chemically reacting flow software for combustion modeling.

ME 10512: Rocket Propulsion 3 s.h.
Principles of rocket propulsion theory are presented along with practical applications of rocket propulsion design. Theoretical topics include performance analysis of ideal rocket engines, departure from ideal performance and detailed thermochemical propellant calculations. Practical design issues are addressed for both liquid propellant engines and solid rocket motors. The course also includes an introduction to electric propulsion.

ME 10513: Principles in Advanced Heat and Mass Transfer 3 s.h.
Prerequisite: CHE 06311 or ME 10322
The topics covered in this course extend and complement the Thermal-Fluid Sciences II course. While Thermal-Fluid Sciences II provides an overview and introduction to the engineering fundamentals of heat transfer, Principles of Advanced Heat and Mass Transfer will provide a deeper knowledge of heat transfer principles, and will allow more rigorous and open-ended problems to be examined. The course will include two additional topics, radiation and mass transfer. Students successfully completing this course will be able to solve a wider range of heat and mass transfer problems encountered in industry.

ME 10514: Energy Conversion Systems 3 s.h.
This course will introduce energy conversion technologies for the generation of electrical power. Topics will include a review of power cycles, steam and gas cycles, generation of thermal power, combustion and fuels, steam power plant design considerations, gas turbine power plant operation and design considerations, combined cells, and environmental considerations in power generation. A course project will be required on an advanced topic of mutual interest between the student and instructor.

ME 10521: Gas Dynamics 3 s.h.
This course emphasizes application of the conservation equations of mass, momentum and energy to solve problems in one-dimensional and two-dimensional compressible flow including one-dimensional isentropic flow, flow with area change, adiabatic flow with friction, normal shock waves and flow with heat addition. The method of characteristics is introduced to solve two-dimensional compressible flow problems. Numerical techniques are presented and a numerical analysis project is completed on one-dimensional, unsteady flow.

ME 10522: Computational Fluid Dynamics 3 s.h.
This course introduces computational fluid dynamics (CFD) using a primarily software-based approach. Following an overview of the key steps involved with CFD, the class reviews the fundamental mathematics that govern fluid dynamics. An overview of governing equation discretization techniques is presented with assignments that involve building custom algorithms to solve simplified CFD problems. CFD essentials such as consistency, stability and convergence are covered in-depth. Several modeling labs are used to build software skill and explore internal and external flows that are largely incompressible and viscous. The final weeks of this class are dedicated to a final project on a student-selected topic. The student will complete an independent laboratory exercise of project.

ME 10530: Reliability Engineering 3 s.h.
This course introduces the background, important topics, and practical aspect of reliability engineering. It covers critical concepts such as reliability mathematics, life data analysis, probability plotting, reliability prediction, reliability modeling, design for reliability, design of experiments, and analysis of variance. The course also examines how reliability engineering can be used in applications, especially in mechanical systems.

ME 10533: Renewable Energy: Photovoltaics and Energy Harvesting 3 s.h.
This course covers concepts and technologies related to renewable energy. The emphasis will be placed upon photovoltaics and energy harvesting. Topics include energy economy, renewable energy concepts and resources, photovoltaics, semiconductors, p-n junctions, solar cells using crystal materials, thin films, and organic materials, and energy harvesting using piezoelectric and thermoelectric devices. Course topics will be reinforced by in-depth discussion on research progress in renewable energy. Students will complete a term paper with the focus on an advanced topic in renewable energy.

ME 10540: Advanced Manufacturing 3 s.h.
This course will provide students with knowledge of modern manufacturing processes, how design is optimized for manufacture, and information on future directions of manufacturing, such as additive (3D printing) manufacturing techniques and the use of digital data across the product life cycle. The course will also discuss the taxonomy of manufacturing processes and provide an examination of current state of the art manufacturing with an emphasis on trends and directions in manufacturing, the relationship of digital data to design and production, and the impact of supply chain on production decisions.

ME 10541: Advanced Mechanism Design 3 s.h.
This course presents an in-depth coverage of the design of mechanisms using matrix methods as the platform to model, synthesize, analyze and simulate mechanisms. It covers advanced design techniques that include type synthesis, numerical optimization techniques as applied to mechanism design. It also covers branch defects and circuit defects that occur during mechanism synthesis and modeling and simulation of mechanical systems. Students will perform analysis and simulation using appropriate mechanism design software.

ME 10542: Advanced Mechatronics 3 s.h.
This course introduces the students to the design and development of mechatronic systems. It introduces the students to the multidisciplinary nature of mechatronic products, and teaches them to design and develop such products. Students will learn about mechatronic design philosophy, mechatronic system modeling, sensors, actuators, microprocessors and their interfaces. The course project will involve the design of a real-world mechatronic system. A final project will be required.

ME 10543: Advanced Design for X 3 s.h.
This course introduces students to the design of systems from the Design for X perspective. The Design for X course teaches how to deal with conflicting and ever-increasing constraints upon the design process. It teaches students to adopt a systematic design approach that addresses issues related to manufacture, assembly, environment, reliability and other factors.

ME 10544: Automotive Engineering 3 s.h.

ME 10550: Advanced Solid Mechanics 3 s.h.

ME 10551: Mechanics of Continuous Media 3 s.h.
Students will engage the three-tiered framework used to interrogate problems involving bodies of continuous media. This begins with derivation of the governing equations from the conservation of mass, momentum, and energy followed by the application of constitutive models, such as Hooke's law, that govern the behavior of particular materials, and concludes with the solution of boundary value problems. In addition to the study of classical problems and their solutions, students will be required to program numerical algorithms for the solution of problems that can not be solved in closed form. Kinetic and kinematic constraints, such as material frame indifference, compatibility, and objectivity, will be addressed. The material covered will include both cylindrical and Cartesian coordinate frames.

ME 10552: Structural Acoustics 3 s.h.
Control of noise is an important part of engineering practice in many industries today. Vital to effective noise control is an understanding of wave behavior in structures. This course will teach engineers the fundamentals of the generation of noise in structures, with an emphasis on the phenomena of mechanical resonance and modal behavior. Topics covered include vibration of strings, bars, beams and plates. An introduction to simple acoustic sources will be given.

ME 10553: Analytical Dynamics 3 s.h.
This course is an advanced introduction to three-dimensional motion of particles and rigid bodies. Students study modern analytical rigid body dynamics equation formulation and computational solution techniques applied to mechanical systems and multibody systems. Students will formulate Newton/Euler and Lagrangian equations for applications to engineering systems, Hamiltonians principle, study kinematics of motion generalized coordinates and speeds, analytical and computational determination of inertia properties, generalized forces, holonomic and nonholonomic constraints, computational simulation.

ME 10554: Elastic Stability of Structures 3 s.h.
Many important structures (e.g. buildings, bridges, aircraft frames) have buckling as a primary mode of failure. Because of this, it is important for structural engineers to have at least a cursory knowledge of elastic stability phenomena. This course will provide graduate-level Mechanical Engineering students with an overview of elastic stability in structures, and a brief introduction to dynamic stability, as applied to rotating shafts. Applications of mathematical theory to real-world structural design problems will be emphasized.

ME 10555: Principles Of Nanotechnology 3 s.h.
Prerequisites: (PHYS 02200 or PHYS 00220) and (PHYS 02201 or PHYS 00222) and CHEM 06100
This course explores the science and engineering at the nanometer scales. Topics include fundamentals of nanotechnology; types and properties of nanomaterials; methods of fabrication; how these materials are characterized and the potential applications.

ME 10556: Special Topics in Mechatronics 3 s.h.
Prerequisite: ME 10542
This course builds on the skills and background knowledge obtained from the Advanced Mechatronics course. The students will further their exploration on more advanced topics as well as expand their exposure to various related fields. The topics include advanced mechatronics components such as sensing, actuation, and power management, integrated mechatronic systems such as robots (including forward and inverse kinematics of robotics), unmanned vehicles, and automations, as well as related areas such as Programmable Logic Controller, Internet of Things, Blockchain, ethics, and regulations. As the field of mechatronics is rapidly evolving, more front-line topics will be included to reflect the future development.

ME 10560: Composite Materials 3 s.h.
This course presents the fundamental concepts in the mechanics and manufacturing of composite materials. Topics include micromechanics (rule of mixtures and its applications in homogenization and the effective property determination) and macromechanics of composites. Classical laminate theory and its application to calculate properties of lamina and laminate, effects of stacking sequence, etc. are covered. The course briefly discusses failure theories and basic testing of composite laminates. Simulation and hands-on projects (including composite laminate fabrication) are included to help students gain a better understanding of composite materials.

ME 10561: Engineering Optimization 3 s.h.
The formulation and modeling aspects of engineering optimization problems are presented. These steps involve setting up of the objective function to be minimized and the resource and system constraints to be satisfied. Solution techniques using gradient based methods, zero order methods, and penalty techniques are discussed.

ME 10562: FEA with ANSYS 3 s.h.
This course presents the fundamentals of finite element analysis & simulation using Ansys (a commercial FEA code). Ansys is widely used by mechanical and aerospace engineering industry. The course introduces methods to model material properties, describe boundary conditions, and discretize solid bodies into proper finite elements. The Static Structural Module of ANSYS workbench is covered in some details. Dynamics and transient simulations are also covered using ANSYS Explicit module. Concepts related to topology optimization and analysis of composite materials (including multi-scale modeling) are briefly discussed.

ME 10566: Soft Robotics 3 s.h.
This course introduces students to the fundamentals of the soft robots, wearable robotics, and other bioinspired soft intelligent systems. A survey of the field will be provided, including recent advancements and comparison to traditional rigid bodied robotic counterparts. The course focuses on principles of the design, fabrication and modeling of soft, flexible sensors and actuators. Various actuation and sensing principles as well as modeling and simulation of soft materials and structures will be discussed.

ME 10570: Principles in Biomechanics 3 s.h.
This course presents topics in the biomechanics of human motion. The course will encompass the use of engineering principles to describe, analyze and assess human movement. Topics will include kinematics, kinetics, anthropometry applied to the synthesis of human movement and muscle mechanics. A course project and laboratory project will enhance this course.

ME 10571: Principles in Biotransport 3 s.h.
Prerequisites: ENGR 01341 or ME 10321
This course introduces biotransport in terms of heat transfer, mass transfer, and fluid mechanics related to the human body. Some examples include cryosurgery of warts and drug delivery from skin patches. Beginning with biotransport problem formulation, the course explores software tools that enable mathematical modeling. Fundamental principles of model validation, mesh convergence, sensitivity analysis, and objective functions are presented. Several modeling labs are used to build software skill and explore various heat and mass transfer processes inside and around the human body. Medical device development concepts are presented, making a connection between modeling activities and product development. The final weeks of this class are dedicated to a final project on a student-selected topic. The student will complete an independent laboratory exercise or project.

ME 10572: Principles in Biomaterials 3 s.h.
Prerequisites: ENGR 01281 or ENGR 01283
The goal of this course is to introduce the numerous issues that factor into material selection for biomedical devices. Issues to be examined include mechanical properties, biocompatibility, production costs, and ease of manufacture. This course will familiarize students with relevant material issues and highlight the process for matching material performance with the desired design characteristics and functionality.

ME 10576: Principles in Orthopaedic Biomechanics 3 s.h.
Prerequisite: ENGR 01272 or ENGR 01273
This course presents both introductory and emerging areas of orthopaedic biomechanics. The course will encompass the use of engineering principles to describe, analyze and assess the musculoskeletal system. Topics will include bone and soft tissue mechanics, implant systems, fracture fixation, joint replacements and reviews of current research.

ME 10580: Aerospace Vehicles 3 s.h.
This course provides an introduction to the design of aerospace vehicles, with a focus on passenger jet and combat aircraft. Fundamental concepts of aerodynamics, aircraft performance, flight dynamics, and structural design are covered. Unmanned air vehicles and space launch vehicles are also discussed briefly. Student teams are required to perform airplane conceptual design and submit their project report.

ME 10582: FLIGHT DYNAMICS 3 s.h.
Prerequisite: ME 10580
This course provides an introduction to flight dynamics of airplanes. Flight dynamic equations of unsteady motion and linearized EOM are presented. Stability and control of longitudinal and lateral - directional motions are studied. Student teams are required to perform S&C analysis of an airplane and submit a project report.

ME 10705: Special Topics in Mechanical Engineering for Doctoral Students 1 to 6 s.h.
Prerequisite: Doctoral Student Standing in Engineering
The students will study advanced topics in Mechanical Engineering. Special Topics courses may be traditional classroom-based courses or research-related courses sponsored by specific advisors.

MED 01627: Scholars Workshop IV 1 s.h.

MED 01628: Ambulatory Clerkship IV 1 s.h.

MHP 00610: Basic Laboratory Techniques-Biology 3 s.h.
Prerequisite(s): MBS 00501 and MBS 00502 ("C" grade or better in each course)
This course will teach students the most basic techniques used in a modern biomedical laboratory, to prepare them to integrate these techniques into more advanced processes they will use later. *This course is only open to students in the Masters in Histopathology program.*

MHP 00611: Histology I: Basic Tissue Types 3 s.h.
Prerequisite: MBS 00501 and MBS 00502; or ANS 00501, with "C" grade or better in each course
This course introduces students to the basic tissue types, as well as some of the common stains used to differentiate elements of tissue. In addition, students will learn to use a microscope and analyze photomicrographs critically. *This course is only open to students in the Histopathology and Anatomical Sciences programs.*

MHP 00612: Histology II: Techniques 4 s.h.
Prerequisite(s): MHP 00610 and 00611 ("C" grade or better in each course)
This lab-intensive course builds upon the theory learned in Histology I: Basic Tissue Types. Students will be trained in histological techniques in a hands-on setting, in order to develop the critical skills required to become a histotechnologist. Students will learn to section various animal tissue utilizing a microtome and cryostat, and perform basic staining procedures. *This course is only open to students in the Masters in Histopathology program.*

MHP 00613: Histology III: Organ Systems 3 s.h.
Prerequisites: MHP 00611 and MBS 00503 with C or better
In this course, students will apply their knowledge of tissue types to develop an understanding of organ structure and function. This will include information specific to commonly used animal models (e.g. rats, mice, rabbits). *This course is only open to students in the Histopathology and Anatomical Sciences programs.*

MHP 00614: Basic Laboratory Animal Techniques 4 s.h.
Prerequisites: MHP 00511 and MHP 00512 and MHP 00514.
This basic animal techniques course will teach students mouse colony management and preclinical research techniques. This course is lab intensive . Students will receive one-on-one instruction for each of the indicated skills listed in the syllabus. This format will allow student to develop basic skills in managing a mouse colony and processing of tissues, which is valuable for job replacement upon graduation. *This course is only open to students in the Masters in Histopathology program.*

MHP 00615: Advanced Animal Techniques 4 s.h.
Prerequisites: MHP 00610 and MHP 00611 and MHP 00612 andMHP 00614
This advanced animal techniques course will reinforce what students learned about basic mouse colony management and teach students advanced preclinical research techniques. This course is lab intensive. Students will receive one-on-one instruction for each of the indicated skills listed in the syllabus. This format will allow students to develop advanced animal research skills, which is valuable for job placement upon graduation. *This course is only open to students in the Masters in Histopathology program.

MHP 00616: Topics in Pathology 2 s.h.
Prerequisite: MBS 00503 & MHP 00611Co=requisite: MHP 00613
This course will provide students in the Masters in Histopathology program exposure to the pathology of major organ systems. *This course is only open to students in the Histopathology and Anatomical Sciences programs.*

MUS 04514: Choral Procedures 2 s.h.
Designed as a laboratory course for choral directors in the organization of rehearsal techniques, selection and placing of voices and development of programs. Special attention is given to individual vocal needs.

MUS 04536: Chamber Music I 1 s.h.
The study and performance of selected repertoire for specific instrumental groups and combinations. Students will be assigned to a small ensemble and will be required to rehearse and to perform the chosen repertoire in a public setting.

MUS 04537: Chamber Music II 1 s.h.
The study and performance of selected repertoire for specific instrumental groups and combinations. Students will be assigned to a small ensemble and will be required to rehearse and to perform the chosen repertoire in a public setting.

MUS 04540: Jazz Arranging And Composition 3 s.h.
The course presents techniques in arranging and composition in the jazz idiom and is tied to the course CD Project in that it coordinates the needs of the second course through preparation in Jazz Arranging and Composition. Students will be required to arrange and orchestrate existing compositions and compose original music in the jazz idiom.

MUS 04541: Jazz Piano 1 s.h.
This course in applied music for the non-pianist focuses on the basic keyboard skills needed by the professional jazz musician, especially the use of the piano to realize harmonic progressions and concepts. The student must have passed the piano proficiency exam before enrolling for this course.

MUS 04545: Opera Role Study I 3 s.h.
A complete opera role from the standard repertoire will be learned and performed in each semester through private instruction and coaching, either in staged or unstaged, in public.

MUS 04546: Opera Role Study II 3 s.h.
A complete opera role from the standard repertoire will be learned and performed in each semester through private instruction and coaching, either in staged or unstaged, in public.

MUS 04551: Piano Accompanying I 1 s.h.
This course in applied piano accompanying will pair the student with a vocal or instrumental student under the supervision of the piano instructor.

MUS 04555: Counterpoint 3 s.h.
The principles of counterpoint and its practical application in musical literature are studied.

MUS 04557: Advanced Orchestration 3 s.h.
This course will introduce the conducting student to the practical considerations of performance on orchestral instruments and their use in orchestral repertoire.

MUS 04560: Form And Analysis 3 s.h.
The course presents important contemporary approaches to the analysis and understanding of music of all periods including those of the present. Students will present analyses of works appropriate to their graduate level studies in their major area. This is a required course for all students in the master of music program.

MUS 04561: Score Reading I 1 s.h.
This course begins training the conducting student to read orchestral scores, including the mastery of clefs and transposition. It is a requirement for the Master of Music in Instrumental Conducting.

MUS 04562: Score Reading II 1 s.h.
This course continues training the conducting student to read orchestral scores, including the complete mastery of clefs and transposition, and the study of score reductions. It is a requirement for the Master of Music in Instrumental Conducting.

MUS 04565: Seminar In Band Conducting 3 s.h.
This course will involve classroom discussion, research, and scholarly presentations of topics related to the business of conducting, where students will share their views with other students and the facilitator. The class will visit rehearsals of professional organizations and bands and will interview known professionals in the field. A lecture presentation by each student on a relevant conducting topic will conclude the semester.

MUS 04570: 20th Century Literature And Techniques 3 s.h.
This course explores 20th century music and the compositional techniques it embodies. Emphasis will be upon important trends and developments that are still current in the music of today. Each student will present his/her own research in this area of study as it relates to their major area of study. This is a required course for the master of music in composition.

MUS 04575: Cd Project 2 s.h.
The student will develop and produce a compact disk containing the student's original compositions through the choice of repertoire to be performed, the rehearsal of the material, to the completion of the technical and business details leading to a final product.

MUS 05500: Analyzing Jazz Structures 1 s.h.
Prerequisite(s): None
This course will guide the student through the basics of jazz song forms and solo construction. Analysis of both will be stressed. This course is repeated for three semesters, focusing on different materials and repertoire each semester.

MUS 05501: Jazz Analyzing Structures 1 s.h.
Prerequisite(s): None
This course will guide the student through the basics of jazz song forms and solo construction. Analysis of both will be stressed. This course is repeated for three semesters, focusing on different materials and repertoire each semester.

MUS 05502: Analyzing Jazz Structures 1 s.h.
Prerequisite(s): None
This course will guide the student through the basics of jazz song forms and solo construction. Analysis of both will be stressed. This course is repeated for three semesters, focusing on different materials and repertoire each semester.

MUS 05503: Jazz Composition 3 s.h.
Prerequisite(s): None
This course will guide the student through the basics of jazz composition from historical perspectives, analysis of great seminal composers, small and large form compositions, and analysis of various compositional styles.

MUS 08156: Contemporary Music Ensemble 1 s.h.
Dedicated to the performance of new music, this ensemble performs the works of Rowan composition students and other contemporary composers.

MUS 10501: Graduate Secondary Applied Instrument I 2 s.h.
Private instruction on a student's major instrument. Designed to guide the development of each student toward the realization of his fullest potential as a performer.

MUS 10502: Graduate Secondary Applied Instrument II 2 s.h.
Private instruction on a student's major instrument. Designed to guide the development of each student toward the realization of his fullest potential as a performer.

MUS 10503: Graduate Secondary Applied Instrument III 2 s.h.
Private instruction on a student's major instrument. Designed to guide the development of each student toward the realization of his fullest potential as a performer.

MUS 10504: Graduate Secondary Applied Instrument IV 2 s.h.
Private instruction on a student's major instrument. Designed to guide the development of each student toward the realization of his fullest potential as a performer.

MUS 10505: Graduate Secondary Applied Voice I 2 s.h.
Private instruction in techniques of singing. Designed to guide the development of each student toward the realization of his fullest potential as a performer.

MUS 10506: Graduate Secondary Applied Voice II 2 s.h.
Private instruction in techniques of singing. Designed to guide the development of each student toward the realization of his fullest potential as a performer.

MUS 10507: Graduate Secondary Applied Voice III 2 s.h.
Private instruction in techniques of singing. Designed to guide the development of each student toward the realization of his fullest as a performer.

MUS 10508: Graduate Secondary Applied Voice IV 2 s.h.
Private instruction in techniques of singing. Designed to guide the development of each student toward the realization of his fullest potential as a performer.

MUS 10509: Graduate Applied Instrument I 4 s.h.
Private instruction on a student's major instrument. Designed to guide the development of each student toward the realization of his fullest performer as a performer.

MUS 10510: Graduate Applied Instrument II 4 s.h.
Private instruction on a student's major instrument. Designed to guide the development of each student toward the realization of his fullest potential as a performer.

MUS 10511: Graduate Applied Instrument III 4 s.h.
Private instruction on a student's major instrument. Designed to guide the development of each student toward the realization of his fullest potential as a performer.

MUS 10512: Graduate Applied Instrument IV 4 s.h.
Private instruction on a student's major instrument. Designed to guide the development of each student toward the realization of his fullest potential as a performer.

MUS 10513: Graduate Applied Voice I 4 s.h.
The continuation, on an advanced level, of the intensive study of vocal technique and performance begun in the undergraduate level. Successful completion requires the preparation and performance of a graduate recital of sufficiently high quality to provide access to professional auditions, doctoral programs and teaching positions in higher education.

MUS 10514: Graduate Applied Voice II 4 s.h.
The continuation, on an advanced level, of the intensive study of vocal technique and performance begun in the undergraduate level. Successful completion requires the preparation and performance of a graduate recital of sufficiently high quality to provide access to professional auditions, doctoral programs and teaching positions in higher education.

MUS 10515: Graduate Applied Voice III 4 s.h.
The continuation, on an advanced level, of the intensive study of vocal technique and performance begun in the undergraduate level. Successful completion requires the preparation and performance of a graduate recital of sufficiently high quality to provide access to professional auditions, doctoral programs and teaching positions in higher education.

MUS 10516: Graduate Applied Voice IV 4 s.h.
The continuation, on an advanced level, of the intensive study of vocal technique and performance begun in the undergraduate level. Successful completion requires the preparation and performance of a graduate recital of sufficiently high quality to provide access to professional auditions, doctoral programs and teaching positions in higher education.

MUS 10517: Graduate Applied Instrument I 6 s.h.
Private instruction on a student's major instrument. Designed to guide the development of each student toward the realization of his fullest potential as a performer.

MUS 10518: Graduate Applied Instrument II 6 s.h.
Private instruction on a student's major instrument. Designed to guide the development of each student toward the realization of his fullest potential as a performer.

MUS 10519: Graduate Applied Instrument III 6 s.h.
Private instruction on a student's major instrument. Designed to guide the development of each student toward the realization of his fullest potential as a performer.

MUS 10520: Graduate Applied Instrument IV 6 s.h.
Private instruction on a student's major instrument. Designed to guide the development of each student toward the realization of his fullest potential as a performer.

MUS 10521: Graduate Applied Voice I 6 s.h.
The continuation, on an advanced level, of the intensive study of vocal technique and performance begun in the undergraduate level. Successful completion requires the preparation and performance of a graduate recital of sufficiently high quality to provide access to professional auditions, doctoral programs and teaching positions in higher education.

MUS 10522: Graduate Applied Voice II 6 s.h.
The continuation, on an advanced level, of the intensive study of vocal technique and performance begun in the undergraduate level. Successful completion requires the preparation and performance of a graduate recital of sufficiently high quality to provide access to professional auditions, doctoral programs and teaching positions in higher education.

MUS 10523: Graduate Applied Voice III 6 s.h.
The continuation, on an advanced level, of the intensive study of vocal technique and performance begun in the undergraduate level. Successful completion requires the preparation and performance of a graduate recital of sufficiently high quality to provide access to professional auditions, doctoral programs and teaching positions in higher education.

MUS 10524: GRADUATE APPLIED VOICE IV 6 s.h.
The continuation, on an advanced level, of the intensive study of vocal technique and performance begun in the undergraduate level. Successful completion requires the preparation and performance of a graduate recital of sufficiently high quality to provide access to professional auditions, doctoral programs and teaching positions in higher education.

MUS 10525: Graduate Music Composition I 4 s.h.
The student develops his undergraduate compositional skills, completing a major work for chamber ensemble which demonstrates an ability to use contemporary compositional ideas in the organization of music.

MUS 10526: Graduate Music Composition II 4 s.h.
This course prepares the student to complete his/her major requirement in music composition: a thesis consisting of a major compositional work and a paper describing its genesis. May be re-taken.

MUS 10527: Graduate Music Composition I 6 s.h.
The student develops his undergraduate composition skills, completing a major work for chamber ensemble which demonstrates an ability to use contemporary compositional ideas in the organization of music.

MUS 10528: Graduate Music Composition II 6 s.h.
This course prepares the student to complete his/her major requirement in music composition: a thesis consisting of a major compositional work and a paper describing its genesis. May be re-taken.

MUS 10529: Graduate Conducting I 2 to 4 s.h.
Private instructing in conducting. This course in the conducting sequence, is designed to guide the development of conductors to a full realization of their technical and musical potential.

MUS 10530: Graduate Conducting II 2 to 4 s.h.
Private instructing in conducting. This course in the conducting sequence, is designed to guide the development of conductors to a full realization of their technical and musical potential.

MUS 10531: Graduate Conducting III 2 to 4 s.h.
Private instructing in conducting. This course in the conducting sequence, is designed to guide the development of conductors to a full realization of their technical and musical potential. During semester III of the conducting sequence, the student is expected to serve as Assistant Conductor of an appropriate ensemble at the discretion of the conducting faculty.

MUS 10532: Graduate Conducting IV 4 s.h.
Private instructing in conducting. This course in the conducting sequence, is designed to guide the development of conductors to a full realization of their technical and musical potential. During semester IV of the applied conducting sequence, the student is expected to serve as Assistant Conductor of an appropriate ensemble at the discretion of the conducting faculty. In addition, as a culminating activity, the student will present a full-length conducting recital.

MUS 10533: Graduate Conducting I 6 s.h.
Private instructing in conducting. This course in the conducting sequence, is designed to guide the development of conductors to a full realization of their technical and musical potential.

MUS 10534: Graduate Conducting II 6 s.h.
Private instructing in conducting. This course in the conducting sequence, is designed to guide the development of conductors to a full realization of their technical and musical potential.

MUS 10535: Graduate Conducting III 6 s.h.
Private instructing in conducting. This course in the conducting sequence, is designed to guide the development of conductors to a full realization of their technical and musical potential. During semester III of the conducting sequence, the student is expected to serve as Assistant Conductor of an appropriate ensemble at the discretion of the conducting faculty.

MUS 10536: Graduate Conducting IV 6 s.h.
Private instructing in conducting. This course in the conducting sequence, is designed to guide the development of conductors to a full realization of their technical and musical potential. During semester IV of the conducting sequence, the student is expected to serve as Assistant Conductor of an appropriate ensemble at the discretion of the conducting faculty. In addition, as a culminating activity, the student will present a full-length conducting recital.

MUS 10537: Graduate Ensemble: Concert Choir 1 s.h.

MUS 10538: Graduate Ensemble: Concert Choir 1 s.h.

MUS 10539: Graduate Ensemble: Concert Choir 1 s.h.

MUS 10540: Graduate Ensemble: Concert Choir 1 s.h.

MUS 10541: Graduate Ensemble: Jazz Band 1 s.h.

MUS 10542: Graduate Ensemble: Jazz Band 1 s.h.

MUS 10543: Graduate Ensemble: Jazz Band 1 s.h.

MUS 10544: Graduate Ensemble: Jazz Band 1 s.h.

MUS 10545: Graduate Ensemble: Lab Band 1 s.h.

MUS 10546: Graduate Ensemble: Lab Band 1 s.h.

MUS 10547: Graduate Ensemble: Lab Band 1 s.h.

MUS 10548: Graduate Ensemble: Lab Band 1 s.h.

MUS 10549: Graduate Ensemble: Orchestra 1 s.h.

MUS 10550: Graduate Ensemble: Orchestra 1 s.h.

MUS 10551: Graduate Ensemble: Orchestra 1 s.h.

MUS 10552: Graduate Ensemble: Orchestra 1 s.h.

MUS 10553: Graduate Ensemble: Wind Ensemble 1 s.h.

MUS 10554: Graduate Ensemble: Wind Ensemble 1 s.h.

MUS 10555: Graduate Ensemble: Wind Ensemble 1 s.h.

MUS 10556: Graduate Ensemble: Wind Ensemble 1 s.h.

MUS 40315: Entrepreneurship in the Music Industry 3 s.h.
Prerequisites: MUS 40111 and MUS 40113 and MUS 40212
This course provides an in-depth view of the major technological disruptions and the ensuring business opportunities that have shaped the music industry, from wax cylinder to vinyl record, cassette, CD, MP3, and Internet streaming services, with a particular focus on how the digital age has utterly transformed the music industry. Comprehensive research and analysis of current and cutting-edge music business models and marketing strategies complete this course curriculum.

MUS 50509: Music Education Workshop 2 to 3 s.h.
Students will engage in hands-on, active music making and learning connected to a variety of topics and content areas in music education. All workshops will emphasize practical application of content to music teaching settings.

MUS 50510: Special Topics Seminars in Music Education 3 s.h.
Seminars will focus on special topics designed to reflect contemporary and changing practices and concerns in the field of music education.

MUS 50511: Research Methods in Music Education 3 s.h.
Research in Music Education Course Description: In this introductory course, students will explore and analyze music education research in several research paradigms. Students will learn to locate, digest, and apply the research literature in music education to their own practice, as well as prepare an action research proposal for potential implementation in their school setting. Students will also focus on building skills that allow them to write in a clear and concise manner and within APA guidelines.

MUS 50520: History of Music Education 3 s.h.
This course provides an overview of the historical development of both local and global music education practices. Past and present methods of teaching and learning music will be discussed, including their rationales, influences, and limitations.

MUS 50540: Social and Psychological Environments of Music Learning 3 s.h.
This course is focused on the psychological and sociological foundations of music education, and how theory influences research and curriculum in the field. Different perspectives in the field of music education will be explored and discussed in terms of how these theories operate in current practice.

MUS 50610: Master's Final Presentation and Project 3 s.h.
Students have the option of completing a capstone final project or a thesis. The nature and structure of the capstone project will be proposed by the student (to be approved by the faculty) and may include a curriculum project, a literature review, or other artifact that connects theory to practice. Both capstone options will be completed under the supervision of a faculty member and will require a public presentation of the work as a criteria for program completion.

MUS 50621: Master's Thesis in Music Education 3 s.h.
This course is taken at the end of the master's program in music education, and provides the student with the opportunity to write and defend a master's thesis based on original scholarship and publish it.

MUS 50630: Equity, Access, and Music Education 3 s.h.
This course is focused on topics related to equity and access as it relates to the field of music education. Literature related to issues of social justice, critical pedagogy, and inclusion will be explored and discussed in terms of current practices and issues in the field.

MUS 50650: Philosophy of Music Education 3 s.h.
This course is focused on the philosophical discourses that influence education in general and music education specifically. Taking both local-historical and global perspectives, students will critique and critically examine the purpose and role of music education in communities and schools.

MUS 50660: Innovation in Curriculum and Instruction 3 s.h.
In this course we will explore the issues related to developing music curricula for students in grades PK-12, in music teacher education programs, and beyond. Together we will consider what, why, how, and who we teach through historical, philosophical, psychological, and sociological lenses, and gain a deeper understanding of educational policy and its impact on curricula. Students will examine and evaluate existing frameworks, assessment tools, and instructional strategies, and design their own individualized curriculum unit/project.

MUS 50670: Global Musics in Education 3 s.h.
The purpose of this course is to acquaint students with the many musics of the world, to provide strategies for its use in the music classroom, and to facilitate an understanding of the study of music and culture. The three strands of the course, world music, world music pedagogy, and ethnomusicology, will be addressed through reading, listening, planning, presenting, and discussing course content. Upon completion of this course, one will be to able to accurately identify musical characteristics of a variety of musics, utilize a culturally informed approach to teaching world music, and incorporate ethnomusicological fieldwork methods to explore an unfamiliar musical culture.

MUS 97301: Trombone Class .5 s.h.
Designed for Music Education majors, this course addresses trombone pedagogy and basic trombone performance.

MUS 97302: Percussion Class 1 s.h.
A study of rudimental and ensemble techniques of snare drum, timpani, bass drum, cymbals and accessory instruments.

MUS 97309: Trumpet Class .5 s.h.
Designed for Music Education majors, this course addresses trumpet pedagogy and basic trumpet performance.

MUS 97310: Tuba Class .5 s.h.
Designed for Music Education majors, this course addresses tuba pedagogy and basic tuba performance.

MUS 97312: Conducting-Instrumental II 2 s.h.
Prerequisites: MUS 97212
This course demonstrates and rehearses the skills of instrumental conducting through music for instrumental ensembles.

MUS 97313: Conducting-Choral II 2 s.h.
Prerequisites: MUS 97213
Students apply basic conducting techniques to repertoire spanning each of the major time periods. In addition to gesture, great emphasis is given to score reading and score analysis skills.

MUS 97400: Voice Class 1 s.h.
A study of the basic principles of singing taught in a group setting. Students will learn beginners breathing technique, tone placement and projection through the singing of goup and solo repertoire. Course is open to non-music majors.

MUS 97401: Bassoon Class .5 s.h.
This course teaches the fundamentals of the bassoon.

MUS 98101: Foundations of Music Therapy 3 s.h.
Prerequisite: Admissions to Music Therapy Program.
Develop an understanding of the methodological and theoretical foundations of this discipline. Learn how to use music as a therapeutic tool to treat a variety of clients, as well as the sociological, psychological, and philosophical theories of music.

MUS 98102: Principles of Music Therapy I 3 s.h.
Prerequisite(s): Admission to Music Therapy Program
In Principles of Music Theory I students will learn to interact with people who have learning, neurological, motor, and medical problems. Students will need to focus on music therapy literature specific for this group of people and be ready to apply their theoretical studies to clinical work.

MUS 98103: Music Therapy Practicum I 1 s.h.
Prerequisite: Admission to Music Therapy program
This course will provide an opportunity for students to acquire supervised experience using music therapy, including assessment, treatment planning, evaluation, and other aspects that support clinical practice. Students will complete a total of 60 supervised clinical hours as part of this course.

MUS 98104: Therapeutic Principles for Music Therapists 1 s.h.
Prerequisite: Admission to Music Therapy program
This course focuses on understanding of therapeutic principles and the therapeutic relationship that are at the basis of music therapy treatment. Topics covered are foundational to music therapy, focusing on therapeutic principles underlying music therapy. These include awareness of personal motivation and values in therapy, dynamics and process of the therapeutic relationship, awareness of ethical issues in therapy, group dynamics, multicultural awareness and applications to therapy, and theories underlying various approaches to therapy.

MUS 98105: Clinical Piano Skills I 2 s.h.
Prerequisite(s): Admission to Music Therapy program; functional piano competence; students must have passed the piano proficiency exam required of undergraduate music majors.
Students learn piano skills needed to implement music therapy in clinical settings. Includes harmonization, accompanying in various styles, and various styles of improvisation. Course includes application of musical concepts and terminologies, such as modes, idioms, styles, scales, and various musical forms into clinical scenarios.

MUS 98106: Clinical Guitar Skills 2 s.h.
Prerequisite: Admission to Music Therapy program
This course is designed to enable students to accompany themselves and to lead others in the singing of simple folk and popular songs, progressing from simple strumming and finger picking to more advanced accompaniment patterns, transposition and the use of the capo.

MUS 98107: Music Applications to Music Therapy I 1 s.h.
Prerequisite: Admission to Music Therapy program
This course will provide an opportunity for music therapy students to apply the music skills that they are learning in other courses (music and music therapy) to the type of musical situations that they will encounter as music therapists. Skills to be practiced include leading songs using simple accompaniment styles, playing and singing songs of basic music therapy repertoire using Q-chord, autoharp, and percussion instruments, and sight reading basic music therapy repertoire.

MUS 98108: Psychology of Music 3 s.h.
Prerequisite(s): Admission to Music Therapy program
This course will provide an opportunity for students to learn about psychological foundations of music, including neurology and the brain, music cognition and perception, emotional meaning of music, musical development and learning, and testing for musical ability. Students will be expected to apply the knowledge acquired in this course in music therapy, music education, and other musical interests.

MUS 98109: Principles of Music Therapy II 3 s.h.
Prerequisite: Admission to Music Therapy program
In Principles of Music Therapy II students will learn to interact with people who have learning, neurological, motor, and medical problems. Students will need to focus on music therapy literature specific for this group of people and be ready to apply their theoretical studies to clinical work.

MUS 98110: Music Therapy Research Methods 3 s.h.
Prerequisite: Admission to Music Therapy program
This course will focus on research methods in conducting, reading, and interpreting music in the context of music therapy; it will include quantitative, qualitative, and mixed methodologies.

MUS 98111: Music Therapy Practicum II 1 s.h.
Prerequisite(s): Admission to Music Therapy program; MUS 98103
This course will provide an opportunity for students to acquire supervised experience using music therapy, including assessment, treatment planning, evaluation, and other aspects that support clinical practice. Students will complete a total of 60 supervised clinical hours as part of this course.

MUS 98112: Clinical Piano Skills II 2 s.h.
Prerequisite(s): Admission to Music Therapy program; MUS 98105
Further development of piano skills needed to implement music therapy in clinical settings. Includes harmonization, accompanying in various styles, and various styles of improvisation. Course includes application of musical concepts and terminologies, such as modes, idioms, styles, scales, and various musical forms into clinical scenarios. Builds on material learned in Clinical Piano Skills I and includes additional applications to clinical settings.

MUS 98113: Music Applications to Music Therapy II 1 s.h.
Prerequisite(s): Admission to Music Therapy program; MUS 98107
This course will provide an opportunity for music therapy students to apply the music skills that they are learning in other courses (music and music therapy) to the type of musical situations that they will encounter as music therapists. Skills to be practiced include leading songs using simple accompaniment styles, playing and singing songs of basic music therapy repertoire using Q-chord, autoharp, percussion instruments, and guitar, and sight reading basic music therapy repertoire.

MUS 98115: Music Therapy Practicum III 1 s.h.
Prerequisite(s): Admission to Music Therapy program; MUS 98111
This course will provide an opportunity for students to acquire supervised experience using music therapy, including assessment, treatment planning, evaluation, and other aspects that support clinical practice. Students will complete a total of 60 supervised clinical hours as part of this course.

MUS 98116: Music Applications to Music Therapy III 1 s.h.
Prerequisite(s): Admission to Music Therapy program; MUS 98113
This course will provide an opportunity for music therapy students to apply the music skills that they are learning in other courses (music and music therapy) to the type of musical situations that they will encounter as music therapists, refining their skills in these areas. Skills to be practiced include leading songs using simple accompaniment styles, playing and singing songs of basic music therapy repertoire using Q-chord, autoharp, percussion instruments, guitar, and piano and keyboard, and sight reading basic music therapy repertoire.

MUS 98117: Residency in Music Therapy 2 s.h.
Prerequisite: Completion of all courses in Music Therapy program; residency is final requirement; MUS 98101, MUS 98108, MUS 98102, MUS 98109, MUS 98110, MUS 98103, MUS 98111, MUS 98115, MUS 98105, MUS 98112, MUS 98106, MUS 98107, MUS 98113, MUS 98116, MUS 98104, PSY 03200
Residency of 1040 hours at an AMTA-or Rowan-approved clinical training center. Application is made upon departmental approval. Development of music therapy clinical skills. Requires clinical work and ongoing supervision from the clinical site (residency supervisor) and/or music therapy faculty. Student will plan and lead individual and group music therapy sessions, write assessment and goal plans, participate in treatment teams, and take part in other activities of the clinical facility. The residency should be taken at a medical facility.

MUSG 05547: Music And The Related Arts 3 s.h.
The aesthetics of music is approached from the point of view that the same forces motivate all the arts and that significant parallels exist among them. This course may not be offered annually.

MUSG 06303: Choral Literature 2 s.h.
A chronological study and analysis of small and large choral works from the early chant to the present is stressed through recordings, live performances and class participation. Conducting of choral work is a major activity of this course.

MUSG 06503: Jazz History 3 s.h.
This course presents an overview of jazz history and requires the student to prepare indepth studies of any three topics related to the history of jazz, chosen in consultation with the professor. Students must exhibit their mastery of these areas by written and oral assignments.

MUSG 06505: History And Literature Of Guitar And Lute 3 s.h.
This course provides indepth study of the literature of the family of plucked instruments, especially the guitar and lute, from the Renaissance to the present day.

MUSG 06506: Art Song Literature 3 s.h.
The indepth study of the evolution and development of the art song as a genre, its development, structure, styles and composers from the 17th century to the present. Aural familiarity and stylistic recognition will be emphasized, as will the association of song composers with their works and periods.

MUSG 06509: String Instrument Literature 3 s.h.
This course explores the literature written for stringed instruments from both stylistic and technical points. Students will study and analyze the most important solo works for the bowed string instruments and will be expected to identify aurally these works and to provide written analyses of several. It is a required course for string students in the master of music program and is available also as an elective.

MUSG 06510: Keyboard Literature 3 s.h.
This course presents a broad overview of the massive literature for the keyboard from Baroque through the end of the 20th century. Students learn to listen, to analyze, and to identify the stylistic characteristics of the great composers for the piano. They will, within the course of the semester, choose several composers whose works are of particular interest to them, thoroughly catalogue their literature and analyze in depth several compositions by each. The results of this work will be presented in oral and written form.

MUSG 06511: Twentieth Century Band Literature 3 s.h.
This course will survey all levels of band repertoire, from elementary through high school, and standard college and professional band works. Students will have a knowledge of where to find musical selections for any scenario, from teaching works to standard competition pieces and public performance selections.

MUSG 06542: Opera Literature 3 s.h.
An historical survey of opera, its development and composers, from 1600 to the present. The course will emphasize the most important operas, their plots, forms and main musical numbers.

MUSG 06545: Development And Interpretation Of Choral Literature 2 s.h.
Studies choral music from Gregorian chant to contemporary works. Representative works of various types studied in detail. These are drawn from various categories such as motet, madrigal, polyphonic chanson, cantata and oratorio. This course may not be offered annually.

MUSG 06546: Development And Interpretation Of Symphonic Literature 3 s.h.
The evolution of instruments, the standardization of the orchestra in the classic period, the introduction of new instruments and the growth of the orchestra are studied. The principal orchestral forms such as the symphony and the concerto are studied and various types of orchestration are examined. This course may not be offered annually.

MUSG 06555: SEL TOPICS-MUSIC ED 3 s.h.

SMED 01120: Foundations Of Music Education 3 s.h.
Foundations of Music Education is an introductory course in the music education program. It provides a broad overview of the field of music education, addressing the historical development of music education in the United States as well as current approaches and issues in the field. The course is framed by three guiding questions: What is the purpose of music education?; How can students best explore music?; and How can teachers best create music learning experiences for their students? In addition, two projects that extend throughout the music education major are introduced: a personal philosophy of music education, and a digital portfolio.

SMED 32329: Teaching/Learning Music A: Elementary General Music 3 s.h.
Prerequisites: C- or better in MUS 04103, MUS 04104, MUS 04216, MUS 04217, EDUC 01284, READ 30319 and SMED 33420
The methods, materials and techniques of teaching music from K through 12 are surveyed. Attention is given to the developmental sequence in the building of musical concepts necessary for the organization of an effective general music program in the public schools.

SMED 32330: Teaching/Learning Music B: Vocal Methods And Techniques 3 s.h.
This course, along with other courses in a series, helps to prepare students to teach the choral arts in the public schools with particular attention to grades 7-12. Techniques of teaching, vocal training, choral organization and the philosophy of teaching choral music are the areas to be emphasized.

SMED 32331: Teaching/Learning Music B: Instrumental Methods And Techniques 3 s.h.
A survey is made of the necessary understanding, techniques, and materials to develop an effective instrumental music program. Consideration is given to the place of instrumental music and its relationship to the total school program.

SMED 32502: Teaching Of Music Theory 3 s.h.
Methods of teaching theory such as listening, reading, writing, analyzing, playing and creating are examined. The content of music theory courses and representative music theory texts are analyzed and evaluated. This course may not be offered annually.

SMED 32505: Selected Approaches In Music Education 3 s.h.
The approaches are those of: Gordon, Kodaly, Orff, Montessori, Suzuki, and Jacques-Dalcroze. The student will research each approach, and while doing an in-depth study on one approach, develop a curriculum for his or her teaching situation. This course is offered bi-annually.

SMED 32506: Guitar Pedagogy 3 s.h.
The student will be made aware of the philosophies of guitar instruction, be familiar with the two or three most widely-used method books and will have begun to develop his/her own pedagogical system. A practicum experience is included in the course.

SMED 32507: Piano Pedagogy 3 s.h.
The course will systematically present the pedagogical methods and materials readily found in the United States for teaching beginning, intermediate and early advanced students of the piano. A supervised practicum is an essential part of the course.

NURS 03303: Comprehensive Health Assessment 3 s.h.
This course builds upon the Registered Nurse's fundamental knowledge and skills of health assessment. In utilizing a systematic approach, the student will develop a holistic approach in assessing the patient throughout the lifespan. Upon completion, the student will show competency in obtaining a thorough health history and becoming efficient in the physical skills of inspection, palpation, percussion and auscultation. Differences between normal and abnormal findings will be explored and appropriate documentation of findings will be stressed. Students will also be exposed to the cultural differences in health and will incorporate evidence based approaches to assessment.

NURS 03304: Nursing Informatics 3 s.h.
This course reviews the information needs and information systems related to nursing practice. Students will experience the manner in which informatics supports all areas of practice, including education, clinical practice, administration and research.

NURS 03309: Topics In Health Care Ethics 3 s.h.
Students in this nursing course will examine moral dilemmas created or intensified by recent advances in medical technology and study ways of analyzing those dilemmas. Discussion topics include: euthanasia and the right to die, abortion, behavior modification, allocation of scarce medical resources, in vitro fertilization, genetic screening and engineering and human experimentation. These moral dilemmas will be related to nursing.

NURS 03401: Community Health Nursing 6 s.h.
Prerequisite: NURS 03303
This course will explore how community health nurses use concepts from nursing and public health to provide comprehensive, continuous, preventative healthcare thereby promoting health for communities, populations at risk, aggregates, families, and individuals. This course prepares the RN to BSN student to develop competencies in managing health status in the context of multicultural communities. Students will be able to expand current knowledge and skills, develop enhanced research and critically thinking skills with the application of these skills to the multicultural community and the global society considering the biopsychosocial, cultural, ethical, legal, and economic issues that impact the community as a client. The clinical practicum focuses on clients with diverse needs in a variety of settings.

NURS 03403: Nursing Care Delivery Systems 3 s.h.
Prerequisite: NURS 03303
The focus of this course is the professional nurse's leadership and management role within health care delivery systems. The multi-faceted aspects of the role of the nurse as leader and manager are explored in depth, with emphasis on the role of the nurse as change agent. Organizational behavior, decision-making, the change process and the management of health care organizations are components of this course. The concepts of professionalism, leadership-management, research and teaching-learning are integrated with the professional nurse's role. This course prepares students to function as change agents in the health care delivery system. The clinical component focuses on the application of relevant theory and research as a basis for decision-making. Students are mentored by faculty, and interact with members of the nursing leadership team to explore Nursing leadership.

NURS 03404: Research Applications In Nursing Practice - WI 3 s.h.
Prerequisites: STAT 02100 and COMP 01112
This course introduces students to the concepts and process of research in nursing. Emphasis is placed on writing and critiquing published studies and developing plans for using research findings in practice.

NURS 03405: Health Care Policy And Finance 3 s.h.
The focus of this course is the professional nurse's role in health care policy and finances within health care systems. The multi-faceted aspects of health care policy making and financing within today's ever-changing health care environment are explored. Risk management and quality care are integrated into the course. This course gives the student a financial understanding of the health care delivery system. Students are exposed to the political and legislative process within health care agencies and health care policy development at the state and federal levels. Ethical and legal issues in nursing and health care are explored.

NURS 03503: Nursing Research 4 s.h.
Prerequisites: STAT 02100 or the equivalentandenrollment in the UMDNJ/Rowan JointR.N. to B.S.N. Program and NURS 03404
Students focus on the theoretical and scientific underpinnings for evidence-based advanced nursing practice. In-depth critical analysis of scientific research and methods for systemic review, as relevant to patient care and health policy outcomes, are emphasized. Ethical, legal, economic, and cultural issues surrounding the conduct and utilization of research practice are examined. Students obtain skills in using bibliographic databases. The roles of the advanced practice nurse in research are explored.

NURS 05500: Integrated Information Technology in Health Care 3 s.h.
Prerequisite(s): BSN, BS, BA (in health care related field) and evidence of successful completion of an undergraduate computer course that contained content in healthcare informatics.
The delivery of efficient health care requires the integration of information technology. This course builds on basic informatics knowledge and challenges the learner to apply these principles to the health care setting. The student will consider emerging technology and creatively investigate ways to improve patient care.

NURS 05501: Advanced Health Assessment 3 s.h.
Prerequisites: Licensed as a Registered Nurse (R.N.)AND BSN OR BA (If student has BA then NURS03303 AND NURS 03404 AND NURS 03405)
Advanced Health Assessment prepqres the graduate nurse to identify abnormal findings and critically analyze these findings. Critical analysis will result in problem identification and planning. This course will serve as a core requirement for completion of a graduate nursing degree.

NURS 05502: Teaching and Learning in Nursing 3 s.h.
Successful Completion of Core MSN courses with a minimum GPA of 3.0
This course begins preparation for the professional nurse to investigate teaching and learning in the nursing field. This initial course lays the foundation for more advanced testing and curricular development courses. Key concepts for investigation include evidence based teaching, learning theories, nursing education theories, technoligical advances in nursing education and clinical competency.

NURS 05503: Advanced Nursing Research 4 s.h.
Prerequisite(s): STAT 02100 or equivalent; enrollment in Rowan Nursing Program
Students focus on the theoretical and scientific underpinnings for evidence-based advanced nursing practice. In-depth critical analysis of scientific research and methods for systemic review, as relevant to patient care and health policy outcomes, are emphasized. Ethical, legal, economic, and cultural issues surrounding the conduct and utilization of research practice are examined. Students utlilize sills in searching bibliographic databases. The roles of the master's prepared nurse in research are explored.

NURS 05504: Advanced Pathophysiology 3 s.h.
Prerequisite: Licensure as a registered nurse and NURS 03303
This course describes the disordered physiology and clinical consequences resulting from common disease processes. Seminar discussions focus on alterations in normal functions of major organ systems. Through problem-solving exercises and case studies, students are encouraged to recognize the pathophysiologic basis of clinical findings associated with disease processes. This course serves as an essential link between the basic sciences and clinical management.

NURS 05505: Advanced Pharmacology 3 s.h.
Prerequisite: Licensure as a registered nurse and NURS 03303 and NURS 05504
This course expands students' knowledge of clinical pharmacology to provide a sound basis from which to engage in prescriptive drug management. Pharmacodynamics, pharmacokinetics and pharmacotherapeutics of drug classes are explored through a variety of teaching-learning methodologies, including seminar discussion, problem-based case study presentations, focused readings, and web-based exercises.

NURS 05506: Learning Assessment in the Classroom and Clinical Environment 3 s.h.
Successful Completion of Core MSN courses with a minimum GPA of 3.0
Nurse educators use a variety of strategies to evaluate student learning in a variety of settings. This course prepares the nurse educator to use assessment and evaluation strategies effectively in relationship to all domains of learning.

NURS 05507: Leadership & Care Delivery Environment 3 s.h.
Prerequisites: Licensed as a Registered Nurse (R.N.)AND BSN OR BA (If BA then NURS 03303 ANDNURS 03404 AND NURS 03405)
This course is focuses on the analysis, integration and application of principles of leadership and management to health care organizations and to population-based efforts across the health care delivery system. The concepts of leadership and stewardship are explored from a historical and contemporary perspective with particular application to the health professions. The course fosters self awareness as a necessary condition for effective self management and self development, and a prerequisite for leading others. Special emphasis is placed on the practical skills needed for nurses to succeed as leaders

and managers in today's local, state, national and international health care environment.

NURS 05508: Special Issues & Trends In Nursing 3 s.h.
Prerequisites: Licensed as a Registered Nurse (R.N.)AND BSN OR BA (if BA then NURS 03303 ANDNURS 03404 AND NURS 03405)
This course focuses on current trends and issues in professional nursing and health care delivery. The course is individually tailored to meet each student's educational goals and area of special interest in nursing and healthcare delivery in the twenty-first century. The topic will vary dependent on the student's interests, goals and objectives as discussed with faculty. Students under the direction of an instructor complete individually designed projects addressing major trends and issues in their emphasis area of nursing and health care delivery.

NURS 05509: Clinical Nurse Leader Role 3 s.h.
Prerequisites: Minimum GPA of 3.0: NURS 03504 ANDNURS 03505 AND NURS 03503 AND NURS 05501 ANDAH 05501 AND NURS 05507 AND NURS 05508 ANDLICENSED AS A REGISTERED NURSE (R.N.) AND BSN
This course immerses the student in the role of the Clinical Nurse Leader. The Clinical Nurse Leader (CNL) is a master's prepared nurse who delivers expertise in care as a generalist. The CNL manages care for patients, individuals, families, and communities. The CNL functions as a provider and manager for care at the point of system entry and strives to produce quality based outcomes. This course discusses the role of the clinical nurse leader as leader, outcomes manager and care environment manager. The graduate student, through participatory learning, will master the key concepts that are imperative to the successful transition into the CNL role.

NURS 05510: Evidence Based Practice In Illness/Disease Management 3 s.h.
Prerequisites: Minimum GPA of 3.0: NURS 03504 ANDNURS 03505 AND NURS 03503 AND NURS 05501 ANDAH 05501 AND NURS 05507 AND NURS 05508 ANDLICENSED AS A REGISTERED NURSE (R.N.) AND BSN
Evidence based practice in illness and disease management is a requirement for quality care delivery. This course serves as one of the mandatory courses in the clinical nurse leader track. This course discusses care management, client outcomes, application of assessment, pharmacology, and pathophysiology to specific disease states, and evidence-based practice.

NURS 05511: Clinical Nurse Leader Practicum I 4 s.h.
Prerequisites: NURS 05509 AND NURS 05510
This course prepares the graduate nursing student for the full clinical implementation of the Clinical Nurse Leader role. Concepts of care environment management are discussed and explored in the clinical setting. Through and interwoven marriage of didactic and clinical experience, the registered nurse will begin to experience the role of the Clincal Nurse Leader. 200 Clinical Hours Required

NURS 05512: Clinical Nurse Leader Practicum II 4 s.h.
Prerequisite: NURS 05511
The Clinical Nurse Leader (CNL) is a master's prepared nurse who delivers expertise in care as a generalist. The CNL manages care for patients, individuals, families, and communities. The CNL functions as a provider and manager for care at the point of system entry and strives to produce quality based outcomes. This course prepares the graduate nursing student for the full clinical implementation of the Clinical Nurse Leader role. Through an interwoven marriage of didactic and clinical experience, the registered nurse will experience the role of the Clinical Nurse Leader. 200 Clinical Hourse Required

NURS 05513: Nursing Curricular Design and Evaluation 3 s.h.
Prerequisite(s): Successful completion of CORE MSN courses with minimum GPA of 3.0, NURS 05502, NURS 05506
Nurse educators are responsible to develop curricular plans that reflect contemporary health care trends. Curricular plans should hinge upon realistic program outcomes that prepare graduates to function effectively in the health care environment. This course explores curricular design, program outcomes, and robust changes in response to curricular evaluation.

NURS 05514: Nurse Educator: Leadership, Quality, and Planned Change in the Practice Environment I 3 s.h.
Prerequisite(s): NURS 05502 and NURS 05506
The nurse educator must be aware of the political, institutional, social and economic factors that impact the role. This course introduces the nurse educator student to concepts of competence, self-assessment, quality improvement and scholarship within the educational environment. Nursing theory and nursing research are presented as a focus for clinical practice implications. The student is provided the opportunity to analyze nurse education and identify an area of practice interest by exploring various roles, such as nurse education at bedside, nurse educator in technical setting, and nurse educator in academia.
100 clinical hours required

NURS 05515: Nurse Educator: Leadership, Quality, and Planned Change in the Practice Environment II 4 s.h.

Prerequisite(s): NURS 05514

This course serves as the final comprehensive nurse educator course. All course activities are based upon the eight competencies of a nurse educator defined by the National League of Nursing (NLN) and supported by the American Association of the College of Nursing (AACN). Through ongoing faculty tutelage the graduate student completes eight competency projects. In addition, clinical submersion in the role of nurse educator occurs in a precepted environment.
200 clinical hours required

NURS 05516: Epidemiology Health Promotion & Disease Management 2 s.h.

Prerequisite: Completion of the core MSN course with a GPA of 3.0 or higher and admission into a Nurse Practitioner specialization

This course introduces the graduate nursing student to the concepts of epidemiology and population based medicine. Theories of wellness, health promotion and global opportunities for healthy living are presented. Through synthesis of these concepts the advanced practice nursing student will develop a theory of practice that incorporates health promotion throughout the lifespan. This course examines the relation of human groups to their environments as mediated by culture.

NURS 05517: Nurse Practitioner Role: History, Practice Regulations, Reimbursement and Ethics 2 s.h.

Prerequisite: Completion of the core MSN course with a GPA of 3.0 or higher and admission into a Nurse Practitioner specialization

This course will investigate the role of the nurse practitioner from a historical perspective with implications to current practice requirements. The nurse practitioner student will investigate the history of their specialty nurse practice, the regulations that apply to their specialty nurse practice, their role as a leader and advocate. A synthesis of this information that incorporates evidence based practice initiatives will occur. Special emphasis on ethical and cultural diversity and considerations about age variations, cultural variations, religious variations, health promotion and diversity across the lifespan will assist nurse practitioner students in developing their practice own practice philosophy.

NURS 05518: AGACNP: Assessment, Diagnosis, & Differential Disease Management 1 s.h.

Prerequisite: Completion of the core MSN courses with a GPA of 3.0 or higher and admission in the Adult-Gerontology Acute Care Nurse Practitioner specialization

This course challenges the nurse practitioner student to apply previously obtained advance assessment techniques to technologically derived data to differentiate conditions in acutely ill patients. Interpretation of relevant data, radiographs, and electrocardiographs will be presented. Condition treatment plans will be discussed in relation to available acute care settings. Laboratory practice will occur and include procedures commonly encountered in the acute setting.
The student who does NOT meet the clinical requirements will receive a failing grade in this course regardless of the course work evaluation scores.
25 clinical hours

NURS 05519: AGACNP I: Evidence Based Clinical Care for Adult Gerontological Acute Care Nurse Practitioner 3 s.h.

Prerequisite(s): NURS 05518

This course introduces the AGACNP student to key concepts in the management of acutely ill individuals across the adult lifespan. All information is presented via case study format. The graduate student will apply evidence based practice, and diagnostic reasoning when developing the treatment plan. The need to organize advanced assessment, diganostic interventions, and caring practices will be illuminated. Disease specific conditions are presented with a focus on pathophysiology and advanced therapeutics. This is the first of three clinical practice courses. Successful course completion is defined as success in both the didactic and clinical portions of the course.
The student who does NOT meet the clinical requirements will receive a failing grade in this course regardless of the course work evaluation scores.

NURS 05520: AGACNP II: Evidence Based Clinical Care for Adult Gerontological Acute Care Nurse Practitioner 4 s.h.

Prerequisite(s): NURS 05519

This course investigates medical conditions encounterd by the acutely ill adult across the lifespan. Special consideration is given to medically challenging cases and mental health disorders. The AGACNP student will analyze data and develop evidence based treatment plans. The challenges to perform in a collaborative environment and partner with patients, families and communities will be discussed. Topics for future nurse practitioner researcher will be discussed. The student will be submersed in clinical practice with an experienced preceptor.
The student who does NOT meet the clinical requirements will receive a failing grade in this course regardless of the course work evaluation scores.

NURS 05521: AGACNP III: Evidence Based Clinical Care for Adult Gerontological Acute Care Nurse Practitioner 4 s.h.

Prerequisite(s): NURS 05520

This course investigates surgical conditions encountered by the acutely ill adult across the lifespan. Special consideration is given to challenging cases and traumatic injuries. The AGACNP student will analyze data and develop evidence based treatment plans. The ethical dilemmas presented by acute injury and advanced age will be discussed. Reimbursement and quality improvement initiatives will be presented. Topics for future nurse practitioner researcher will be discussed. The student will be submersed in clinical practice with a experienced preceptor.

The student who does NOT meet the clinical requirements will receive a failing grade in this course regardless of the course work evaluation scores.

NURS 05522: Family Nurse Practitioner I: Primary Care of the Adult Patient and Older Adult Patient 3 s.h.

Prerequisite(s): Completion of the core MSN courses with a GPA of 3.0 or higher and admission into the Family Nurse Practitioner specialization

This course focuses on the role of the APN in the primary care of the adult and older adult. Utilizing lectures, assigned readings, and case studies the advanced practice student will incorporate advance assessment skill to formulate differential diagnoses of a variety of acute and chronic conditions that inflict the adult and older adult client. Conditions discussed in this course focuses on the Skin, Head, Eyes, Ears, Nose and Throat, Heart and Lungs. Clinical judgment skills will be developed to select proper pharmacological and non-pharmacological therapies of management. Concentration of the aspects of health promotion and disease prevention will be highlighted. Clinical portion will emphasize didactic components of the course and apply them to episodic and chronic problems of the adult and older adult.

100 clinical hours

NURS 05523: Family Nurse Practitioner II: Primary Care Management of the Adult Patient and Older Adult Patient 3 s.h.

Prerequisite: NURS 05522

This course focuses on the role of the APN in the primary care of the adult and older adult. Utilizing lectures, assigned readings, and case studies the advanced practice student will incorporate advance assessment skills to formulate differential diagnoses of variety of acute and chronic conditions that inflict the adult and older adult client. Conditions discussed in this course will address the gastrointestinal, hepatobiliary, neurology, renal and urinary, and reporductive systems. Issues of Mental Health such as anxiety, depression, bipolar, eating and substance abuse will also be brought into focus. Clinical judgment skills will be developed to select proper pharmacological and non-pharmacological therapies in the management of these conditions. Concentration of the aspects of health promotion and disease prevention will be highlighted. Clinical portion will emphasize didactic components of the course and apply them to episodic and chronic problems of the adult and older adult.

NURS 05524: Family Nurse Practitioner III: Primary Care Management of the Female Patient 4 s.h.

Prerequisite: NURS 05523

The course build upon the current knowledge from primary care management of the adult and older adult I and II and extending its focus to the issue of women's health issues. Using lecture, assigned readings and case studies, the didactic compnent of this course will focus on episodic and chronic disease facing woman from diverse populations from menarche throughout the postmenopausal stage. Care management concepts of the pregnant client will also be introduced. Course content will also reflect prescribing practices in relation to the pharmacodynamics and pharmacokinetics that can affect pregnant and lactating women. Clinical hours will reinforce the didactic element of the class incorporating skills of assessment, differential diagnosis, and evidence base practice to provide optimal obsterical and gynecological care of the female client.

NURS 05525: Family Nurse Practitioner IV: Primary Care Management of Children and Adolescents 4 s.h.

Prerequisite: NURS 05524

This course focuses on the primary care of the infant, child and adolescent population. Developmental and culturally competent health assessment is a key component of the course. Utilizing these skills the advanced practice student will learn thru lecture, assigned readings and case studies how to develop differential diagnoses in order to plan, implement and manage common acute and chronic health problems of the pediatric/adolescent client. Clinical hours will reinforce the didactic component of the class in addition to concentrating on evidence based practice to address the needs of this population.

NURS 05526: Family Nurse Practitioner V: Practicum in Family Practice 4 s.h.
Prerequisite: NURS 05525
This is a clinical immersion practicum that is a culmination of the learning experience for the family nurse practitioner student. Its purpose is to allow the students the opportunity to provide comprehensive health care to diverse clients across the lifespan. Successful completion will entail the ability for the student to completely demonstrate the use of theory, evidence-based practice in assessing, diagnosing, and treating clients. Students will be able to provide cost-effective and safe family based care integrating concepts of health promotion and disease prevention. Monthy meetings with assign faculty will occur within this clinically focused course to identify problems and answer relevant questions.

NURS 05527: Adv Dev, Hlth Asmt, Wellness, Hlth Promotion & Disease Prvntn of the Infant, Child, and Adolescent 3 s.h.
Prerequisite(s): Admission into Acute Care Pediatric Nurse Practitioner Specialty and 100 Clinical Hours
This course focuses on the role of the Acute Care in the health assessment, advanced development, wellness, health promotion and disease prevention of the infant, child and the adolescent. Utilizing lectures, assigned readings, laboratory expereinced, clinical solutions and case studies the advanced practice pediatric student will utilize advance assessment skills to promote health and wellness in the infant, child and adolescent. This course will focus on the health assessment of infant's, children and adolescent. Disease prevention will be a focus to promote optimal health in the infant, child and adolescent. The clinical component will integrate concepts discussed in the class and apply them to the patient population in welll baby and pediatric situations.

NURS 05528: Advanced Chronic Care of the Infant, Child and Adolescent in the Health Care System 3 s.h.
Prerequisite(s): NURS 05527 and 150 Clinical Hours
This course focuses on the role of the Acute Care Pediatric Nurse Practitioner in the care of the infant child and adolescent in the health care system with chronic conditions. Chronic health conditions will be reviwed in relation to each body system. The pharmacological interventions for each condition will be explored and evaluated. Utilizing lectures, assigned readings, laboratory experiences, clinincal situations and case studies the advanced practice pediatric student will implement evidenced based practice to care for the infant, child and the adolescent with chronic health care deviations. The clinical component will integrate concepts discussed in class and apply them to the patient population.

NURS 05529: Advanced Acute Care of the Infant, Child and Adolescent in the Health Care System 3 s.h.
Prerequisite(s): NURS 05528 and 150 Clinical Hours
This course focuses on the role of the Acute Care Pediatric nurse practitioner in the care of the infant, child and adolescent in the treatment of acute health care deviations. Acute health conditions will be reviewed in the relation to each body system. The pharmacological interventions for each condition will be explored and evaluated. Course content relates to the acute health care problems in infants, children and adolescent and their impact on the family. Incorporating evidenced based research, a family-centered perspective, care is provided which includes psychosocial factors, and ethical considerations. Utilizing lectures, assigned readings, laboratory experiences, clinical situations and case studies the pediatric nurse practitioner will prescribe and provide care based on outcomes. The clinical component will integrate concepts discussed in class and apply them to the patient population in well baby and pediatric situations.

NURS 05530: Advanced Clinical Care for the infant, child and adolescent in the community and medical home 4 s.h.
Prerequisite(s): NURS 05529 200 Clinical hours The student who does NOT meet the clinical requirements will receive a failing grade in this course regardless of the course work evaluation scores.
This course focues on the care provided to the infant, child and adolescent in the community and medical home. THis course provides the Acute Care Pediatric nurse practitioner with the ability to synthesize and integrate the knowledge, skills, and attitudes important to providing care for infant, child, and adolescent and the community in which they live. The course emphasizes the importance of a holistic perspective and an understanding of the client and family as individuals with diverse spiritual and cultural needs and expectations and as a member of the community. Synthesis and analysis of previously learned concepts will provide the student with the opportunities to recognize their own feelings, needs, and issues regarding care, and issues pertaining to end of life while addressing the multicultural needs of the infant, child and adolescent while addressing health care disparities. Content includes societal, physical, psychological, ethical, and spiritual aspects of life and death. The pharmacological interventions will be explored and evaluated individually. Course content relates to the health care problems in infants, children and adolescent and their impact on the community. Incorporating evidenced based research, a family-centered perspective, care is provided which includes psychosocial factors, and ethical considerations. Utilizing lectures, assigned readings, laboratory experiences, clinical situations and case studies the Acute Care Pediatric nurse practitioner will prescribe and provide care based outcomes.

NURS 05531: FNP ACROSS THE LIFESPAN 3 s.h.
Prerequisite(s): NURS 05504 and NURS 05505 and NURS 05503 and NURS 05501 and AHI 05501 and NURS 05507 and NURS 05508 and NURS 05538 and NURS 05545 and and NURS 05546 and NURS 05544
Nurse Practitioners must possess advanced knowledge and skill to deal with complex issues. This course focuses on the integration of assessment findings with differential diagnoses, appropriate diagnostics and treatments based upon evidence in practice. A special focus on health screenings, head, eyes, ears, nose and throat disorders, endocrinology, cardiac disorders, dermatology, musculoskeletal and hepatic disorders is investigated in young adults, middle aged adults, and older adults.

NURS 05532: FNP Across the Lifespan 3 s.h.
Prerequisite(s): NURS 05504 and NURS 05505 and NURS 05503 and NURS 05501 and AHI 05501 and NURS 05507 and NURS 05508 NURS 05538 and NURS 05545 and NURS 05546 and NURS 05544
Nurse Practitioners must possess advanced knowledge and skill to deal with complex issues. This course focuses on the integration of assessment findings with differential diagnoses, appropriate diagnostics and treatments based upon evidence in practice. A special focus on health screenings, head, eyes, ears, nose and throat disorders, endocrinology, cardiac disorders, dermatology, musculoskeletal and hepatic disorders is investigated in young adults, middle aged adults, and older adults.

NURS 05533: AGACNP Adult Medicine Clinical I 3 s.h.
Prerequisite(s): NURS 05504 and NURS 05505 and NURS 05503 and NURS 05501 and AHI 05501 and NURS 05507 and NURS 05508
The focus of this course is integration of the Adult-Gerontologic Acute Care Nurse Practitioner (AGACNP) core knowledge in health promotion and diagnosis and management in the care of the mature and aging patient in the acute care setting. Emphasis is placed on the care of mature and aging patients and families with acute and chronic complex health problems. In addition, the Adult-Gerontologic Nurse Practitioner as a collaborative member of the interprofessional team will be emphasized. This course requires 200 clinical hours.

NURS 05534: Evidence Based Clinical Care for Adult Gerontologic Acute Care Nurse Practitioner I 3 s.h.
Prerequisite(s): NURS 05504 and NURS 05505 and NURS 05503 and NURS 05501 and AHI 05501 and NURS 05507 and NURS 05508 and NURS 05527 and NURS 05533
Nurse Practitioners must possess advanced knowledge and skill to deal with complex issues. This course focuses on the integration of assessment findings with differential diagnoses, appropriate diagnostics and treatments based upon evidence in practice. A special focus on cardiac, toxic exposure, sepsis, pain, oncology, fluid and electrolyte imbalances, endocrine, musculoskeletal, and gastrointestinal disorders is investigated in young adults, middle aged adults, and older adults.

NURS 05535: AGACNP ADULT MEDICIN CLINCL II 3 s.h.
Prerequisite(s): NURS 05504 and NURS 05505 and NURS 05503 and NURS 05501and AHI 05501 and NURS 05507 and NURS 05508 and NURS 05527 and NURS 05533
The focus of this course is integration of the Adult-Gerontologic Acute Care Nurse Practitioner (AGACNP) core knowledge in health promotion and diagnosis and management in the care of the mature and aging patient in the acute care setting. Emphasis is placed on the care of mature and aging patients and families with acute and chronic complex health problems. In addition, the Adult-Gerontologic Nurse Practitioner as a collaborative member of the interprofessional team will be emphasized. This course requires 200 clinical hours.

NURS 05536: Evidence Based Clinical Care for Adult Gerontological Acute Care Nurse Practitioner II 3 s.h.
Prerequisite(s): NURS 05504 and NURS 05505 and NURS 05503 and NURS 05501 and AHI 05501 and NURS 05507 and NURS 05508 and NURS 05527 and NURS 05533 and NURS 05534 and NURS 05535
Nurse Practitioners must possess advanced knowledge and skill to deal with complex issues. This course focuses on the integration of assessment findings with differential diagnoses, appropriate diagnostics and treatments based upon evidence in practice. A special focus on complex disease from the head to toe with critical illness is represented. These life threatening disorders are investigated in young adults, middle aged adults and older adults.

NURS 05537: AGACNP Adult Medicine Clinical III 3 s.h.
Prerequisite(s): NURS 05504 and NURS 05505 and NURS 05503 and NURS 05501 and AHI 05501 and NURS 05507 and NURS 05508 and NURS 05516 and NURS 05517 and NURS 05527 and NURS 05533 and NURS 05534 and NURS 05535
This course develops clinical competency and emphasizes the integration of theory, assessment and advanced therapeutics for young adults, and adults and older adults in a high acuity setting. Students will perform comprehensive clinical assessments including appropriate diagnostic and therapeutic testing. Management of acute and chronic health problems will be under the direction of clinical preceptors. Clinical placements will include a variety of acute/critical care areas including but not limited to: emergency department, medical/surgical intensive care units, intermediate care and specialty services such as transplant and oncology. Gerontology experiences will be provided in long term care, rehabilitation facilities and the acute care setting. In addition, this course emphasizes collaborative partnership development between patients,

their families, and inter-professional teams. This course requires 200 clinical hours.

NURS 05538: Adult Acute and Chronic Disease Management 3 s.h.
Prerequisite(s): NURS 05504 and NURS 05505 and NURS 05503 and NURS 05501 and AHI 05501 and NURS 05508
Nurse Practitioners must possess advanced knowledge and skill to deal with complex issues. This course focuses on the integration of assessment findings with differential diagnoses, appropriate diagnostics and treatments based upon evidence in practice. Conditions discussed in this course include mental illness, neurologic, renal, pulmonary, vascular, endocrine, and gastrointestinal disorders in young adults, middle aged adults, and older adults.

NURS 05539: Screening of Women throughout the Lifespan & Health Promotion: Genetics, Diagnostics & Interventions 1 s.h.
Prerequisite(s): Completion of the core MSN courses with a GPA of 3.0 or higher and admission into the Women's Health Nurse Practitioner specialization. (50 Clinical hours) The student who does NOT meet the clinical requirements will receive a failing grade in this course regardless of the course work evaluation scores.
This course focuses on the role of Women's Health Nurse Practitioner in the health assessment, advanced development wellness, health promotion and disease prevention of the female patient throughout the lifespan in health, pregnancy, post-partum, and acute/chronic illness. Utilizing lectures, assigned readings, laboratory experiences, clinical practicum and case studies the advanced practice will utilize advance assessment skills to promote health and wellness of the female across the lifespan. The clinical component will integrate and apply concepts to the female patient population. Through active clinical learning the student will apply newly acquired knowledge.

NURS 05540: Primary Care for the Women's Health Nurse 3 s.h.
Prerequisite(s): NURS 05539 100 Clinical hours The student who does NOT meet the clinical requirements wil receive a failing grade in this course regardless of the course work evaluation scores.
The course builds upon the current knowledge from screening of women throughout the lifespan and health promotion. Students perform comprehensive assessment of the female client to determine normal, benign variants and disease processes. Based upon assessment plans are formulated and prioritized by differential diagnosis. The student applies knowledge in the clinical setting and demonstrates the ability to deliver effective primary care to females. This care is evidenced based, culturally sensitive, and includes health promotion and disease management.

NURS 05541: Evidence Based Practice for Women's Health and Gynecological Issues Across the Lifespan 4 s.h.
Prerequisite(s): NURS 05540 200 Clinical hours The student who does NOT meet the clinical requirement will receive a failing grade in this course regardless of the course work evaluation scores.
This course focuses on the role of the Women's Health Nurse Practitioner in providing evidence based care to women expereincing gynecological issues across the lifespan. Utilizing lectures, assinged readings, laboratory experiences, clinical practicum and case studies the advanced practice student will utilize advance assessment skills to promote health and wellness of the female across the lifespan. This course will focus on the health assessment of the female across the lifespan. The clinical component will integrate and apply concepts to the female patient population. Through active clinical learning the student will apply newly acquired knowledge.

NURS 05542: Evidence Based Practice for Women's Health/Obstetrics: The Pregnant Woman, Fetus, Neonate and Family 6 s.h.
Prerequisite(s): NURS 05541 200 Clinical hours The student who does NOT meet the clinical requirements will receive a failing grade in this course regardless of the course work evaluation scores.
This course focuses on the role of the Women's Health Nurse Practitioner in providing evidence based care to women experiencing pregnancy. Utilizing lectures, assigned readings, laboratory experiences, clinical practicm and case studies that advanced practice student will utilize advance assessment skills to promote health and wellness of the pregnant female. The clinical component will integrate and apply concepts to the female patient population. Through active clinical learning the student will apply newly acquired knowledge.

NURS 05543: Evidence Based Practice Clinical Course 2 s.h.
Prerequisite(s): NURS 05503 and NURS 05510 40 Clinical hours and Clinical project
Evidence-based practice in illness and disease management is a requirement for quality care delivery. This course supports the student through the development, implementation, and evaluation of an evidence-based practice project in the clinical setting. This course requires successful completion of 40 clinical hours and a clinical project.

NURS 05544: FNP Women's Health/Pediatrics Clinical 3 s.h.
Prerequisite(s): NURS 05504 and NURS 05505 and NURS 05503 and NURS 05501 and AHI 05501 and NURS 05507 and NURS 05508 and NURS 05538 and NURS 05545
The focus of this course is integration of the Family Nurse Practitioner's (FNP) core knowledge in health promotion and diagnosis and management in the care of the female and pediatric patient in the primary healthcare setting. Emphasis is placed on the care of female and pediatric patients with acute and chronic complex health problems. In addition, the family nurse practitioner as a collaborative member of the interprofessional team will be emphasized. This course requires 200

clinical hours.

NURS 05545: FNP Clinical I 3 s.h.
Prerequisite(s): NURS 05504 and NURS 05505 and NURS 05503 and NURS 05501 and AHI 05501 and NURS 05507 and NURS 05508
The focus of this course is integration of the Family Nurse Practitioner's (FNP) core knowledge in health promotion and diagnosis and management in the care of the mature and aging patient and families in the primary healthcare setting. Emphasis is placed on the care of a mature and aging patients and families with acute and chronic complex health problems. In addition, the family nurse practitioner as a collaborative member of the interprofessional team will be emphasized. This course requires 200 clinical hours.

NURS 05546: Women's Health and Pediatrics 3 s.h.
Prerequisite(s): NURS 05504 and NURS 05505 and NURS 05503 and NURS 05501 and AHI 05501 and NURS 05507 and NURS 05508 and NURS 05538 and NURS 05545
Nurse Practitioners must possess advanced knowledge and skill to deal with complex issues. This course focuses on the integration of assessment findings with differential diagnoses, appropriate diagnostics and treatments based upon evidence in practice. A special focus on the female and pediatric patient.

NURS 05547: FNP Clinical II 3 s.h.
Prerequisite(s): NURS 05504 and NURS 05505 and NURS 05503 and NURS 05501 and AHI 05501 and NURS 05507 and NURS 05508 and NURS 05538 and NURS 05545 and NURS 05546 and NURS 05544
The focus of this course is integration of the Family Nurse Practitioner's (FNP) core knowledge in health promotion and diagnosis and management in the care of the mature and aging patient and families in the primary healthcare setting. Emphasis is placed on the care of mature and aging patients and families with acute and chronic complex health problems. In addition, the family nurse practitioner as a collaborative member of the interprofessional team will be emphasized. This course requires 200 clinical hours.

NURS 05551: Theoretical Foundations of Psychotherapy Across the Lifespan 3 s.h.
Prerequisites: Completion of an accredited Master of Science in Nursing (MSN) program or both NURS 05504 and NURS 05505
This course is designed to provide a theoretical foundation to working with high risk individuals, families, and groups across the lifespan. Students retrieve and analyze the best available evidence to guide the development, implementation, and evaluation of individual, group, and family therapy. This course is designed to synthesize advanced practice psychiatric mental health knowledge related to cultural, legal, ethical and moral issues across the lifespan.

NURS 05552: Biopsychosocial Assessment & Differential Diagnosis 3 s.h.
Prerequisite(s): Completion of an Accredited Master of Science in Nuring (MSN) or NURS 05504
This course will examine the advanced concepts of assessment, psychopathology, and differential diagnosis in advanced practice psychiatric-mental health nursing. The Diagnostic and Statistical Manual (5th edition) will be utilized to formulate diagnoses and treatment formulations for psychiatric patients across the lifespan. The course will review the components and use of the comprehensive psychiatric evaluation as means to gather clinical data and information during a psychiatric interview. Various theoretical perspectives about the etiology of common psychiatric disorders will be reviewed. Factors related to epidemiology, genetics, gender, cultural, and ethnicity of psychiatric disorders across the lifespan will be analyzed. A strong emphasis is placed on proper assessment and identification of discrete aspects of cognition, affect and behavior in the diagnosis and treatment planning of psychiatric illness.

NURS 05553: Principles of Psycopharmacology Across the Lifespan 3 s.h.
Prerequisite(s): Completion of an Accredited Master of Science (MSN) Progam or (NURS 05504 and NURS 05505)
This course introduces students to the effects and mechanisms of action of psychoactive drugs. Drugs used in the treatment of psychopathological disorders and drugs of abuse are analyzed. Implications for drug administration are discussed across the lifespan.

NURS 05554: Behavior Theory I: Care of the Adult and the Older Adult and Family 3 s.h.
Prerequisites: NURS 05553 and NURS 05552 and NURS 05551 or (NURS 05500 AND NURS 05501 NURS 05503 and NURS 05504 and NURS 05505 and NURS 05507 and NURS 05508 and NURS 05551 and NURS 05552 and NURS 05553)
This course will focus on synthesized advanced practice knowledge relevant to the multidimensional assessment and interventions processes of the adult and older adult and their family. The examination of theoretical models, evidenced based practice and research findings pertinent to neuroscience, psychopharmacology and psychotherapeutic/psychosocial interventions is evaluated for best evidence-based practices. Students will examine clinical therapeutics, life style modification and complementary therapies as part of their clinical decision making. Knowledge needed for mental health assessment, differential diagnosis, and interventions with culturally diverse individuals is addressed. Diverse psychiatric settings and their patient population dynamics, including presenting psychiatric and medical symptoms and interventions, will be analyzed as part of the advanced practice role.

NURS 05555: Behavior Clinical Practium I: Care of the Adult and the Older Adult and Family 3 s.h.
Prerequisites: NURS 05553 and NURS 05552 and NURS 05551 or (NURS 05500 and NURS 05501 and NURS 05503 and NURS 05504 and NURS 05505 and NURS 05507 and NURS 05508 and NURS 05551 and NURS 05552 and NURS 05553)
This course will provide the student with an opportunity to evaluate and apply evidenced-based approaches of health promotion, diagnosis and management of psychiatric illness. Theoretical based treatment strategies based on evidence- based research will be analyzed and applied to clinical case studies. Theoretical models and research findings pertinent to neuroscience, psychopharmacology and Psychotherapy will be examined regarding care of adults and older adults and their families. Interventions for the care of adults and older adults and their family will be evaluated. A review of evidence-based knowledge needed for assessing, diagnosing, and treatment planning among adults and older adults and their family systems from culturally diverse backgrounds are addressed. Implications of ethical, legal issues, and health policy relative to advanced practice psychiatric nursing in the care and treatment of adults and older adults will be reviewed. Clinical supervision is a component of this course and requires a minimum of 2 hours per week. This course has intensive supervision with instructor and student on a 1:1 biases to review therapeutic modalities in the clinical setting on a weekly biases. This intensive supervision is required in psychiatric and mental health practicums due to the vulnerability of the population.

NURS 05556: Behavior Theory II: Care of the Adult and the Older Adult and Family 3 s.h.
Prerequisite: NURS 05554
This course will focus on the multidimensional biopsychosocial management of adults and older adults within the framework of the family. The examination of theoretical models and evidenced-based research findings pertinent to neuroscience, psychopharmacology and psychotherapeutic/psychosocial interventions of adults and their families is evaluated for best evidence-based practices. Students will examine the adult and aging process as it relates to symptom development and treatment strategies. Crisis theory, psychological trauma, personality disorders, dementia, and substance use assessment and treatment will be highlighted across the adult and aging process. Legal and ethical implications of treatment for adults and the older adult will be incorporated in the advanced practice role.

NURS 05557: Behavior Clinical Practicum II: Care of the Adult and the Older Adult and Family 3 s.h.
Prerequisite: NURS 05555
This practicum is designed to synthesize advanced practice knowledge relevant to persons with psychiatric illness and their families. Treatment models and evidenced-based research findings related to the interventions through the adult life span will be considered in the clinical settings. Acute and chronic mental health changes will be evaluated relative to crisis and grief, anxiety, personality, sleep, addictions, sexual disorders, psychological trauma, dementias and co-occurring medical issues. Endocrine, metabolic, and toxic states are explored in the formulation of differential diagnosis and implications for advanced practice. Clinical practicums will focus on the incorporation of advanced skills related to conducting psychiatric evaluations; determining differential diagnoses; developing clinical case formulations and treatment plans; delivering evidenced-based supportive, brief, and short-term individual, group and family psychotherapy; identifying and evaluating psychopharmacological agents; and implementing outcome measures with adults and older adults and their families. Clinical supervision is a minimum of 2 hours weekly and a required component of this course. This course has intensive supervision with instructor and student on a 1:1 biases to review therapeutic modalities in the clinical setting on a weekly biases. This intensive supervision is required in psychiatric and mental health practicums due to the vulnerability of the population.

NURS 05558: Behavior Theory III: Care of the Child and Adolescent and Family 3 s.h.
Prerequisite: NURS 05556
This course will provide the student with an opportunity to evaluate and apply evidenced-based approaches for health promotion, diagnosis and management of psychiatric illness in the care of children and adolescents and their families. Theoretically based treatment strategies based on evidenced based research will be analyzed and applied to clinical case studies. Theoretical models and research findings pertinent to neuroscience, psychopharmacology and psychotherapeutic/psychosocial interventions of children and adolescents and their family will be evaluated. A review of evidence-based knowledge needed for assessing, diagnosing, and treatment planning among children, adolescents and their family systems from culturally diverse backgrounds is addressed. Implications of ethical, legal issues, and health policy relative advanced practice psychiatric nursing in the care and treatment of children and adolescent will be reviewed.

NURS 05559: Behavior Clinical Practicum III: Care of the Child and Adolescent and Family 3 s.h.
Prerequisite: NURS 05557
This practicum is designed to synthesize advanced practice knowledge relevant to children and adolescents and their families with psychiatric illness. Treatment models and evidence-based research findings related to the primary, secondary and tertiary care through the childhood life span will be considered in the clinical settings. Acute and chronic mental health changes will be evaluated relative to growth and development, neurodevelopmental disorders, psychotic, mood and anxiety problems, elimination, feeding and eating problems, sleep, gender, disruptive problem, addictions, psychological trauma, and co -occurring medical issues. Endocrine, metabolic, and toxic states are explored in the formulation of differential diagnosis and implications for advanced practice. Clinical practicums will focus on the incorporation of advanced skills related to conducting psychiatric evaluations; determining differential diagnoses; developing clinical case formulations and treatment plans; delivering evidenced- based supportive, brief, and short-term individual, group and family psychotherapy; identifying and evaluating psychopharmacological agents; and implementing outcome measures with children and

adolescents and their families. Legal and ethical issues related to treatment will be applied in the clinical settings. Clinical supervision is a component of this course and requires a minimum of 2 hour per week. This course has intensive supervision with instructor and student on a 1:1 biases to review therapeutic modalities in the clinical setting on a weekly biases. This intensive supervision is required in psychiatric and mental health practicums due to the vulnerability of the population.

NURS 05560: Evidence Based Practice In Illness/Disease 3 s.h.
Pre-requisites: NURS 05516 and NURS 05517
This course examines how national health issues impact health care organizations, explores transitional care for successful care delivery and coordination, evaluates population groups facing challenges to health care access, and compares and contrasts functional components of U.S. health care with other countries in the world.

NURS 05561: The Role of the Nurse-Theory and Practice 3 s.h.
Prequisite(s): NURS 05507, NURS 05508, NURS 05500,NURS 05503, NURS 05509
This course explores the tools and theoretical concepts to develop leadership skills of the nurse executive. The content of the course addresses the challenges facing today's leader in health care systems and considers the need for leaders who can transform these challenges into opportunities. Evidence-based decision-making strategies are discussed related to patient safety, practice excellence, and leading teams. The role of the nurse executive as it relates to the significance of power and influence through care delivery models is also presented.

NURS 05562: Healthcare Organizational Structure 3 s.h.
Prerequisite(s): NURS 05507 and NURS 05508 and NURS 05500 NURS 05503 and NURS 05560 and NURS 05561
The course explores the tools and theoretical concepts to guide management of operations in healthcare organizations. The content of the course addresses how Six Sigma and Lean Management quality improvement methodologies work to improve health outcomes. There is an overview and history of organizational behavior as it applies to health care management. The course also details strategies such as cultural intelligence among others that are needed by healthcare organizations to handle the needs of an increasingly diverse patient population.

PHIL 09110: The Logic Of Everyday Reasoning 3 s.h.
This course in informal logic aims at improving the student's reasoning through a thorough exposure to common logical fallacies as these appear in ordinary language, and through a study of rational procedures for problem-solving. Students have opportunities for extensive practice at discovering and overcoming their own logical faults in writing and speech as well as practice at rational problem-solving.

PHIL 09120: Introduction To Philosophy 3 s.h.
This basic course in the methods of philosophical inquiry investigates how these methods have been applied to selected philosophical issues by classical and contemporary philosophers.

PHIL 09130: Introduction to Symbolic Logic 3 s.h.
This course provides students with a working familiarity with the principles and procedures involved in deductive logic.

PHIL 09150: Introduction to Ethics 3 s.h.
This historically structured course emphasizes both the natural of moral problems and the variety and adequacy of selected moral theories. The course involves reflection and analysis of classic and contemporary theories and thinkers. This course carries a mutual exclusion with the following courses; you may not enroll in it if you have completed any of the following with a passing grade: PHIL 09151

PHIL 09241: Social and Political Philosophy - WI 3 s.h.
Prerequisite: COMP 01112
This is an introduction to the broad themes of political philosophy and social theory; How human life is and should be organized into societies; the nature of political systems and different forms of government; the relationship between the individual and the state; the nature of justice; the influence of economy on society; how human nature influences social nature; and the meanings of freedom, equality, and democracy. Meets Rowan Core writing intensive guidelines with a variety of graded and ungraded writing assignments and papers.

PHIL 09310: Aesthetics 3 s.h.
Prerequisite: At least one PHIL course, or more than one Arts course (ART, ARHS, MUS, MUSG, THD, RTF).
This course offers students an approach to such philosophical issues as the nature; the role of the arts in human culture; and the articulation of criteria for interpretation and criticism. Students will refine their own approach to these issues by attending to specific works of poetry, fiction, drama, music, painting, sculpture, and other arts, including student works.

PHIL 09328: Philosophy And Gender 3 s.h.
Prerequisite: At least one PHIL course or PHRE course or INTR 01130
This course will explore philosophical issues relating to gender as considered by classical, modern and contemporary philosophers. Recent work by feminist philosophers will be emphasized.

PHIL 09370: Epistemology 3 s.h.
Prerequisite: At least one course in PHIL
This course addresses philosophical questions concerning the nature of knowledge. Some of these questions include: How can we be sure that our knowledge of the world is accurate? What is the relation of evidence to our understanding of the world? What distinguishes mathematical knowledge from scientific and ethical knowledge? Students will study and criticize both traditional and contemporary approaches to the understanding of knowledge. Students will also develop and refine their own views in response to these issues.

PHIL 09521: Philosophical Approaches to Diversity, Equity, and Identity 3 s.h.
Prerequisite: Enrollment in MA or COGS in Diversity and Inclusion
This course covers philosophical issues arising in relation to institutional, social, and cultural diversity. Topics to be addressed may include ontological and epistemic questions arising in relation to socio-cultural identity and difference, as well as ethical / socio-political philosophical approaches to recognition of, rights and duties to others and distributive, restorative and reparative justice.

PHIL 09531: Applied Ethics 3 s.h.
This course covers classic and contemporary issues in applied ethics. Topics to be addressed may include multiculturalism, globalization, sexual harassment, affirmative action and diversity issues in employment, social responsibility and justice, social media ethics, professional ethics, and other topics. Students will apply ethical theories and principles to contemporary ethical dilemmas and issues.

REL 10100: World Religions 3 s.h.
This course surveys the major world religions in both the Eastern and Western traditions. The course replaces REL 10200 RELIGIONS OF THE WORLD. It is not permitted to earn credit in both.

REL 10210: Religion In America 3 s.h.
This course explores the wide variety of religious movements that have existed and continue to exist in America. Both traditional religions and cults are considered within the context of American culture.

ASTR 11520: Selected Topics in Space Science 3 s.h.
This course will provide an in-depth study of topics covering stars, planets, the solar system, galaxies and the universe as a whole. It will focus on the scientific evidence for our understanding as well as the application of the laws of physics controlling them. This course is meant to prepare middle school teachers to cover space science topics required by the K–8 NJ Core Curriculum Science Standards.

ASTR 17520: Selected Topics In Earth Science 3 s.h.
This course will provide an in-depth study of topics covering the properties of the Earth including its surface, water, and atmosphere. It will focus on the forces and processes that shape and control change to these systems. This course is meant to prepare middle school teachers to cover earth science topics required by the K–8 NJ Core Curriculum Science Standards.

MSE 00510: Structure, Symmetry, and Properties of Materials 3 s.h.
This course focuses on the interplay between the structural and physical properties of materials. It covers a wide range of materials including inorganic phases, polymers and biomaterials. Discussion begins with how chemical bonding leads to varying symmetry in the structure and leads to how the local symmetry determines the physical properties. Finally, the course describes how the physical properties can be modulated by the synthesis and processing.

MSE 00520: Thermodynamics of Materials 3 s.h.
This course will enable students to appropriately apply engineering, chemical, and statistical thermodynamics to solve problems, to use thermodynamics to predict and interpret phase equilibria and stability in unary and multicomponent systems, to describe liquid and solid solution behavior using solution thermodynamics, to describe thermal behavior of condensed matter including phase transitions and order-disorder transformations, and to analytically examine adsorption processes using surface thermodynamics. Students will learn to use thermochemical calculation software, and the principles behind how these software operate. This course will use a combination of lectures, in-class discussions, problem-based learning, and project-based learning experiences to provide students with a strong foundation in thermodynamics of materials. The learning goals listed above contribute to the program goals that the Ph.D. Program in Materials Science and Engineering (MSE) has set forth for its graduate students.

MSE 00530: Experimental Techniques in Materials Science and Engineering 3 s.h.
Pre-requisite: Graduate standing or approval by instructor
Experimental techniques used for synthesis and characterization of various materials will be covered in this course. Hands-on training will be available using several lab tools including x-ray diffraction system, optical interferometer, scanning electron microscopy, energy dispersive spectroscopy, and others. Particle diffraction and its use will be described and demonstrated. Thin film deposition techniques will be discussed. This course is required for students in the MSE PhD program.

MSE 00610: Kinetics of Materials 3 s.h.
Pre-requisites: MSE 00520 or Permission of Instructor
This is a graduate level course designed to teach students how materials assemble into their observed structures. Materials (solids and liquids), biomaterials, and amorphous solids are governed by principles of kinetics for diffusion, nucleation and growth, and adatom addition to atomic-scale structures at surfaces and interfaces. This course will enable students to use kinetics equations and principles to predict materials structure formation in different processes. This course will use a combination of lectures, in-class discussions, problem-based learning, and project-based learning experiences to provide students with a strong foundation in the kinetics of materials. The learning goals listed above contribute to the program goals that the Ph.D. Program in Materials Science and Engineering (MSE) has set forth for its graduate students.

MSE 00620: Materials Science and Engineering Journal Club 1 s.h.
This is a graduate level course which will teach students how to perform systematic and literature reviews. Students will gain experience at writing and understanding the differences between literature searches, literature reviews, systematic reviews, and meta-analysis. As well, students will be exposed to ideas in strong inference in scientific thinking to appreciate how certain types of systematic thinking leads to more rapid progress than others. This course will use a combination of lectures, in-class discussions, and project-based learning experiences to provide students with a strong foundation in literature survey. At the end of this course, students will have an understanding of how to write a convincing literature review for their dissertation. The learning goals listed above contribute to the program goals that the Ph.D. Program in Materials Science and Engineering (MSE) has set forth for its graduate students.

MSE 00798: PhD Dissertation Research Continuation 9 s.h.
Pre-requisites: MSE 00799
Continuation of supervised research leading to a Ph.D. dissertation in MSE.

MSE 00799: PhD Dissertation Research 1 to 9 s.h.
Pre-requisite: Ph.D. Student Status
The Ph.D. dissertation highlights the research activities and outcomes, innovations, and key contributions to the field of Materials Science and Engineering from a doctoral student. Completing a Ph.D. dissertation requires the student to identify unsolved problems, formulate hypotheses for potential solutions, design experiments, implement theoretical, modeling, and experimental methods, collect and analyze results, and draw conclusions. This is a long-term process that requires significant dedication in time and effort from the student. PhD Dissertation Research is a research course designed to provide necessary time and guidance for the student to work on cutting edge research towards the Ph.D. degree while retaining full-time status as a graduate student. All Ph.D. students are expected to take appropriate number of credits of this course for their doctoral research. Taking these research credits will guide students in preparation, execution, and defense of their Ph.D. dissertations. Each section of this course will be associated with a faculty member. Each Ph.D. student will take the particular section from his/her Ph.D. advisor, who will be guiding the student's doctoral research.

MSE 01700: Foundations in Processing, Manufacturing, and Properties of Materials 0 s.h.
This course will enable students to explore the myriad of ways that processing and manufacturing dictate properties in materials. Students will see presentations by invited speakers whose talks will focus on various processing and manufacturing techniques and how those techniques lead to the observed material properties. Property measurement techniques will also be covered. The learning goals listed above contribute to the program goals that the Ph.D. Program in Materials Science and Engineering (MSE) has set forth for its graduate students.

PHSC 01532: Physical Science Activity for Teachers 3 s.h.
This course will provide an in-depth study of selected topics in physics and/or chemistry. It will focus on deepening content knowledge through activity and inquiry based learning that can be emulated and translated to the K–8 classroom. This course is meant to prepare middle school teachers to cover physical science topics required by the K–8 NJ Core Curriculum Science Standards with an emphasis on activity/lab processes.

PHSC 01599: INDEPENDENT STUDY 3 s.h.

PHYS 00150: Physics Of Everyday Life (Lecture and Lab) 4 s.h.
The goal of this course is to expose students with a non-science background to physics. The students will experience the excitement of physics by examining phenomena of our everyday environment. The historical development of such ideas will be studied as well. Topics selected for study include mechanics, matter, heat, sound, light, electricity, magnetism, atomic and nuclear physics. Physics will be communicated in a conceptual framework along with straightforward algebraic and trigonometric formulations.

PHYS 00210: Physics I Without Calculus (Lecture and Lab) 4 s.h.
Prerequisites: Score of at least 60 on CLM OR MATH 01122 OR MATH 01130 with concurrent registration allowed OR MATH 01140 with concurrent registration allowed
This course studies the principles of mechanics, heat, and fluids. Calculus is not used. The course emphasizes problem work involving the use of Algebra, Trigonometry, and Geometry.

PHYS 00211: Physics II Without Calculus (Lecture and Lab) 4 s.h.
Prerequisite: PHYS 00210 or PHYS 00220
This course studies the basic principles of electricity, magnetism, and light. Calculus is not used. The course emphasizes problem work involving the use of Algebra, Trigonometry, and Geometry.

PHYS 00220: Introductory Mechanics (Lecture and Lab) 4 s.h.
Co/Prerequisite: MATH 01130 or Math 01140
This course studies the basic principles or mechanics and is equivalent to most calculus based introductory mechanics courses often entitled Physics I. The course is designed to cover introductory mechanics (Newton's laws, energy and momentum conservation, rotating systems, statics, gravity and simple harmonic motion) at a level appropriate for future scientists and engineers. The course includes a laboratory component and it emphasizes problem-solving techniques.

PHYS 00221: Introductory Thermodynamics, Fluids, Waves, & Optics (Lecture and Lab) 4 s.h.
Prerequisite: PHYS 00220Corequisite: MATH 01131 or MATH 01141
This introductory course studies the basic principles of thermodynamics, fluids, waves, and optics and their application. The concepts will be applied through problem solving and laboratory experiences. A large portion of the content of this course builds from the concept of conservation of energy covered in the introductory mechanics course. The course is required for any physical science and physics majors and recommended for those majoring in biochemistry, chemistry, biology, engineering, or mathematics. The specific topics covered include elastic properties of materials, fluid mechanics, mechanical waves, sound, conduction of heat, kinetic theory of gasses, the laws of thermodynamics, light, geometric optics, interference and diffraction.

PHYS 00222: Introductory Electricity & Magnetism (Lecture and Lab) 4 s.h.
Prerequisite: PHYS 00220Corequisite: MATH 01131 or MATH 01141
This course studies the basic principles of electricity and magnetism and is equivalent to most calculus based introductory electricity and magnetism courses often entitled Physics II. The course is designed to cover introductory electricity and magnetism (charge, current, potential, fields, AC and DC circuits, Maxwell's Equations, and electromagnetic waves) at a level appropriate for future scientists and engineers. The course includes a laboratory component and it emphasizes problem-solving techniques.

PHYS 00300: Modern Physics (Lecture and Lab) 4 s.h.
Prerequisites: (MATH 01131 or MATH 01141) AND(PHYS 00211 or PHYS 00222)
This course covers modern physics developed since the turn of the 20th century. After a review of some classical physics, course topics include special relativity, wave and particle aspects of radiation, matter waves, models of the atom, ionization, spectra, x-rays, and introductory quantum theory. It also covers theories developed by Planck, Einstein, Rutherford, Bragg, Bohr, Compton, de Broglie, Pauli, Schrodinger and Heisenberg.

PHYS 00310: Analytical Mechanics 4 s.h.
Prerequisites: PHYS 00300 AND MATH 01230
This course teaches students Newtonian, Lagrangian, and Hamiltonian formulations of mechanics, and their applications to such problems as Central Force Motion, Linear and Nonlinear Oscillations, Collisions between particles, Noninertial Systems, Coupled Oscillations and Normal Coordinates, and Rigid Bodies.

PHYS 00320: Electricity & Magnetism I 4 s.h.
Prerequisites: PHYS 00300 AND MATH 01230
This course studies classical electromagnetism. Its topics include: the laws of electromagnetic force, Maxwell's equations, electromagnetic induction, interaction of currents, and electromagnetic energy and waves.

PHYS 00330: Mathematical Methods for Physics 3 s.h.
Prerequisite: MATH 01230 Corequisite: PHYS 00300 (Concurrent enrollment allowed)
This course studies mathematical topics as they apply to physics: complex numbers, determinants and matrices, Fourier series, ordinary and partial differentiation. Certain more advanced topics may be treated: calculus of variations, gamma and beta functions, coordinate transformations, tensor analysis, functions of complex variable, Legendre polynomials and Bessel functions. The course will include computational as well as analytical methods.

PHYS 00340: Optics & Light (Lecture and Lab) 4 s.h.
Prerequisite: PHYS 00211 and PHYS 00300 orpermission from the instructor to by pass PHYS 00300
This course studies the nature and propagation of light, dispersion, reflection and refraction at plane and spherical surfaces, lenses (thin and thick), aberrations of lenses and mirrors, optical instruments, polarization, diffraction and photometry. It also discusses modern developments and techniques (such as fiber optics, lasers, holography).

PHYS 00360: Molecular Biophysics 4 s.h.
Prerequisites: PHYS 00300 OR MCB 01102
This course is aimed at understanding the physics of biological systems. The goal of the course is to quantitatively define biological systems and their functions. Key emphasis will be placed on (1) understanding theories, laws, and axioms that govern systems and their behavior and (2) the use of physics to determine quantitative information about systems and their behaviors. For each topic, the basic laws of physics will be reviewed followed by their application to specific biomolecular and biological system examples. the laboratory component is aimed at giving students hands-on experience in measurement and observation for biological systems.

PHYS 00410: Quantum Mechanics I 4 s.h.
Prerequisites: PHYS 00300 AND MATH 01230
This course will serve as an introduction to quantum mechanics. Students will learn the basic concepts of quantum mechanics and how to solve simple problems using quantum mechanics. Topics selected for study include the origins of quantum mechanics, the free particle in wave mechanics, particles in one-dimensional potentials, the axiomatic formulation of quantum physics, particles in three-dimensions, spin and the Pauli exclusion principle.

PHYS 00430: Statistical Physics 3 s.h.
Prerequisite: PHYS 00310 or PHYS 00320
The student will study in detail the laws of thermodynamics. The statistical derivation of these laws will be presented. Topics include: ideal gases, classical and quantum distribution functions, phase transitions, and other special topics.

PHYS 02525: Mathematical Methods In Physics 3 s.h.
The following topics are studied as they apply to the solution of problems in physics: infinite series, complex numbers, determinants and matrices, partial differentiation, vector analysis and calculus, and Fourier series. The requirements of this course also include independent study of topics not discussed in class. The student will be expected to turn in a paper demonstrating his ability to solve problems in two or more of the following topics: calculus of variations, gamma and beta functions, coordinate transformations and tensor analysis, coordinate transformations and tensor analysis, functions of a complex variable, series solutions of differential equations, integral transforms, and partial differential equations. Admission to the course will be at the discretion of the graduate advisor.

PHYS 02527: Statistical Mechanics 3 s.h.
The student will consider the laws of thermodynamics from a statistical point of view. Topics may include: ideal gases, simple thermodynamic systems, classical and quantum distribution functions, phase transitions, and other special topics. The requirements for this course include a graduate laboratory project and/or research paper. Admission to the course will be at the discretion of the graduate advisor.

PHYS 02528: Electricity And Magnetism I 4 s.h.
This course studies static fields and charges and the application of vector calculus to electricity and magnetism. Maxwell's equations are derived from basic electrostatic phenomena. Some of the immediate consequences of Maxwell's equations, such as electromagnetic waves, will also be covered. The requirements of this course include a graduate research paper or a laboratory project. Admission to the course will be at the discretion of the graduate advisor.

PHYS 02529: Electricity And Magnetism II 3 s.h.
In this course, some of the major consequences of Maxwell's equations, such as the generation and propagation of electromagnetic waves, scattering, and special relativity will be explored. A special attention will be given to the connection of electricity and magnetism with relativity. The requirements of this course include a graduate laboratory project or research paper. Admission to the course will be at the discretion of the graduate advisor.

PHYS 02530: Applied Physics Lab 4 s.h.
This course introduces modern experimental techniques commonly used in physics. Projects consist of original experimental research experiences in Solid State Physics, Laser Physics, and/or other experimental areas of current research in the department. Experimental results are correlated with existing theories. Technical writing and presentation skills are developed and evaluated.

PHYS 02541: Quantum Mechanics I 4 s.h.
This course will serve as an introduction to quantum mechanics. Students will learn the basic concepts of quantum mechanics and how to solve simple problems using quantum mechanics. Topics selected for study include the origins of quantum mechanics, the free particle in wave mechanics, particles in one-dimensional potentials, the axiomatic formulation of quantum physics, particles in three-dimensions, spin and the Pauli exclusion principle. The requirements of this course include a graduate research paper or a laboratory project.

PHYS 02542: Quantum Mechanics II 3 s.h.
This course is a continuation of Quantum Mechanics I. Students will learn more advanced concepts and problems in quantum mechanics. Topics selected for study include the formalism of quantum mechanics, particles in three-dimensions, spin and angular momentum, quantum statistical mechanics, time-independent perturbation theory, time-dependent perturbation theory, and scattering. Some topics may overlap with the ones in Quantum Mechanics I, but are taught at a higher level. The requirements of this course include a graduate research paper or a laboratory project.

PHYS 02555: Mechanics 4 s.h.
Emphasizes Newton's laws of motion, the conservation laws, kinetics and reactions, calculation of moments of inertia, periodic motion and heat. Theories and principles will be related to the motion and properties of gross bodies, and the relevance of these ideas to modern atomic physics will be pointed out. The requirements of this course include a graduate laboratory project and/or research paper. Admission to the course will be at the discretion of the graduate adviser. This course may not be offered annually.

PHYS 02559: Light 4 s.h.
Geometrical and physical optics are treated. Study is made of reflection, refraction, lenses (thin and thick) and systems of lenses. Consideration is given to dispersion, diffraction, interference and polarization. The use of these effects in spectroscopy and polarimetry is emphasized. The requirements of this course include a graduate laboratory project and/or research paper. Admission to the course will be at the discretion of the graduate adviser.

PHYS 02560: Advanced Molecular Biophysics 4 s.h.
This course is aimed at understanding the physics of biological systems at the molecular level. The goal of the course is to quantitatively understand relationships between biomolecular structures and function. Key emphasis will be placed on (1) understanding theories, laws, and axioms that govern biomolecules and their behavior and (2) the use of experimental physics to determine quantitative information about biomolecules and their behaviors. For each topic, the laws of thermodynamics will be reviewed followed by their application to specific biomolecular and biological system examples. the laboratory component is aimed at giving students hands-on experience in measurement and observation of biomolecular structures and their thermodynamics transitions. Students will engage in both an experimental research project and preparation of a review article on a biomolecular system of their choice.

PHYS 02561: Electronics 4 s.h.
A basic course in the theory of generation and detection of electromagnetic waves leading to a study of vacuum tubes, rectifiers, amplifiers, oscillators, oscilloscopes, electronic switches and wave generators. The requirements of this course include a graduate laboratory project and/or research paper. Admission to the course will be at the discretion of the graduate adviser.

PHYS 02563: Atomic Physics 4 s.h.
Considers the molecular structure of matter and the structure of the atom. Studies the kinetic theory of gases, the photoelectric effect, x-rays and their properties, the wave properties of matter, the Bohr model of the atom and the excitation states of the atom. The requirements of this course include a graduate laboratory project and/or research paper. Admission to the course will be at the discretion of the graduate adviser.

PHYS 02571: Advanced Biophysics: Fundamentals of Biomaterials 3 s.h.
This course is aimed at applying material physics and technology to regulate and support biological systems and functions. A goal of the course is to fundamentally understand the physics aspects of variable biomaterials and their interactions with biological systems (cells, tissues, organs). A second goal is to use material physics and technology as a tool to design and fabricate biomaterials for artificial tissues and organs, or biophysical devices and sensors. Finally, students will learn and understand public healthcare policies, needs, and resources.

PHYS 02572: TOPICS ADV PHYSICS 4 s.h.

PHYS 02599: INDEP STUDY PHYS SCI 3 s.h.

CSSR 99501: Data Literacy for Civil/Public Service 3 s.h.
This course will introduce students to "the language of data." Students will explore different types of data, learn about data attributes, and develop skills in data-informed decision making.

CSSR 99502: Data Analysis for Civil/Public Service 3 s.h.
Prerequisite(s): EDPA 02512 and CJ 09511 and CJ 09512
This course provides students with a foundational introduction to data analysis. Students will have the opportunity to learn exploratory analysis, hypothesis testing, and data visualization in software's commonly used in civil and public service. By the end of the course, students will produce an original analysis and visualizations which can be used to demonstrate their skills to employers.

CSSR 99503: Policy Agendas Project New Jersey 3 s.h.
Prerequisite(s): CSSR 99501 or CSSR 99502 or EDPA 02512 or CJ 09511
The course is a hands-on experience in research design and data collection. Students will have a central role in gathering, coding, and analyzing data for the Policy Agendas Project - New Jersey which will be housed at Rowan. The Policy Agendas Project is a free, online tool used by scholars, the public, and lawmakers.

ECON 04101: An Introduction To Economics-A Macroeconomic Perspective 3 s.h.
This course analyzes the overall level of economic activity in the United States and examines its major determinants, public stabilization policies, economic growth and international trade.

ECON 04102: An Introduction To Economics-A Microeconomic Perspective 3 s.h.
This course analyzes resource allocation among alternative uses. It studies consumer demand, product and factor price determination, general equilibrium and optimal income distribution.

ECON 07520: Colloquium in Economics 3 s.h.
This course introduces students to in-depth analysis of a selected theme in Economics, including economic theories, models, and method as well as intensive research, data analysis, problem solving, and class discussion. Selected topics include Economic Development, Environmental Economics, Global Economics, Health Economics, Labor Economics, Public Finance, Money & Banking, and Urban Economics.

EDPA 02320: Public Administration 3 s.h.
Students consider public administration principles and organizations, internal governmental administrative structures, the interactions between organizations and their environments, personnel and policy procedures, administrative communication methods, and other management techniques. This course may not be offered annually.

EDPA 02410: Public Policy 3 s.h.
Students analyze U.S. public policy using a variety of conceptual models including cost-benefit analysis. Case studies are emphasized. This course may not be offered annually.

EDPA 02490: Public Service Internship 3 to 12 s.h.
Students are provided with an opportunity to get first-hand experience in government administration and related political processes through work in a variety of public settings (government agencies, public officials' offices, law firms, etc.).

EDPA 02510: Introduction to Policy Analysis 3 s.h.
This course explores various aspects of the policy process. Students analyze U.S. public policy using a variety of conceptual models, including cost-benefit analysis, with an emphasis on case studies.

EDPA 02512: Quantitative Methods in Public Policy 3 s.h.
This course introduces students to basic statistical methods and their application to public policy analysis. The course covers the essential elements of descriptive statistics, univariate and bivariate statistical inference, multivariate analysis, and data visualization. In addition to covering statistical theory the course emphasizes applied statistics and data analysis. The primary goals of this course are to introduce quantitative skills and encourage a critical approach to reviewing statistical findings.

EDPA 02514: Essentials of Economics for Public Policy 3 s.h.
This course examines the macroeconomic and microeconomic theories, concepts, and empirical content as they relate and apply to public policy. It explores topics of resource allocation and economic well-being at the individual, local, and national scale, with an emphasis placed on the role of government in solving problems inherent to the free market.

EDPA 02516: State and Local Politics in Policy Analysis 3 s.h.
This course provides students with an overview of politics and policy in state and local government. Students will use the comparative method to analyze public policy across the states and within localities. Students will learn about federalism, intergovernmental relations and policy innovation.

EDPA 02518: Public Finance and Cost-Benefit Analysis 3 s.h.
This course introduces market failure as a justification for government provision of public goods and regulation. It will cover public choice theory and cost-benefit analysis for public expenditure, impact of taxation on efficiency, incidence of taxes, personal and corporate income taxes, and fiscal federalism.

EDPA 02520: Social Policy 3 s.h.
This course examines the main theories and empirical developments in social policy. Special attention is paid to the role of politics in both new and emerging social policy debates. A mix of perennial and emerging (e.g. accommodating identity, immigration, and aging) social policy problems are discussed. There will be an emphasis on case studies.

EDPA 02530: Health Policy 3 s.h.
The course examines the intersection of health and public policy. Surveying a range of subjects, it presents an overview of public health, focusing on policy interventions, the influence of various stakeholders in policy decisions, the population health consequences of such decisions, and the policy issues confronting public health practitioners.

EDPA 02540: Environmental Economic Policy 3 s.h.
This course uses the tools of economic and policy analysis to analyze environmental problems, solutions, and regulations. Topics include air and water pollution, climate change, international trade, international environmental agreements and sustainable development.

EDPA 02580: Public Policy Internship 3 s.h.
Prerequisite: 9 earned semester hours in the Master in Public Policy (MPP) Program
This course provides students with practical experience which complements and enhances the knowledge and skills gained in the academic program. Through their placements, students will come into direct contact with policy problems and develop a policy plan tailored to their particular policy setting, ensuring that their academic understanding is well-informed and connected to real-world conditions.

EDPA 02590: Thesis in Public Policy I 3 s.h.
Prerequisite: 9 completed semester hours in the MPP program
Through coursework and background research, this course enables students to focus their policy interests on a significant thesis project, which will serve as the capstone to their MA in Public Policy. In particular, students will develop a question that has yet to be answered by prior research. Students will work with a research advisor to fine-tune their question and hypothesis. Then students work with a faculty who will act as their thesis director on the project.
Students emerge from the thesis process with a solid understanding of how original research is executed and how to best communicate research results. Students will be encouraged to publish their research in academic or professional journals.

EDPA 02592: Thesis in Public Policy II 3 s.h.
Prerequisite: EDPA 02592
Through coursework and background research, this course enables students to focus their policy interests on a significant thesis project, which will serve as the capstone to their MA in Public Policy. In particular, students will develop a question that has yet to be answered by prior research. Students will work with a research advisor to fine-tune their question and hypothesis. Then students work with a faculty member who will act as their thesis director on the project.
Students emerge from the thesis process with a solid understanding of how original research is executed and how to best communicate research results. Students will be encouraged to publish their research in academic or professional journals.

EDPA 02690: Capstone in Public Policy 3 s.h.
The capstone course project is the culmination of the Master of Public Policy. Students will have the opportunity to complete a project directed by an internal or external client. Students will then present their project to an audience that includes the organization, their peers and faculty members. This course will provide students with a chance to apply their content knowledge from their coursework to problem-solving in the field. Students will also benefit from the experience and professional development that working on this project affords.

POSC 07100: Introduction To Government And Politics 3 s.h.
Professors who teach this course will normally focus on some, but not all, of the following topics: political and governmental structures, functions, and processes; political behavior; public law and public policy; and political values or philosophies.

POSC 07110: American Government 3 s.h.
This course focuses on the American Federal government, emphasizing the structure, operation and processes of our political system. Coverage will include political values as they are reflected in major public policies.

POSC 07230: Comparative Political Systems 3 s.h.
This course presents a comparative analysis of the fundamental law, political institutions, policies and processes and their relationship to political culture in Britain, France, the C.I.S. and a selected Third World country.

POSC 07321: Contemporary World Problems 3 s.h.
This course examines selected problems such as terrorism, world population and hunger, regional conflicts and arms control and disarmament.

POSC 07360: Methodology And Statistics In Political Science Research 3 s.h.
This course considers the varied ways that political scientists study problems, with primary attention to scientific method and quantitative skills. Students are expected to become adept at using and interpreting forms of descriptive statistics commonly used in the social sciences.

POSC 07520: CIVIL RIGHTS/LIBERTIES 3 s.h.

POSC 07530: Colloquium in Political Science 3 s.h.
This course explores various ways in which the executive, legislative, and judicial branches influence the policy process in the United States, as well as introducing students to elements of the political system - its bureaucracy, foreign policy establishment, parties and interest groups - that also inform public policy.

CANN 03501: Cannabis Legislation, Regulations, and Policy Evaluation 3 s.h.
This course will examine the legislative, regulatory, and policy landscapes for the cultivation, manufacture, and retail sale of cannabis in the legal market. While an emphasis will be on New Jersey regulations, statutes, and policies, students will also gain a clear understanding of federal policies, laws, and regulations that govern the legal cannabis industry and how these policies impact compliance. Furthermore, the medicinal use of cannabis, public safety, and how the various policies interact and impact institutions, workplaces, and social equity will be explored. Additionally, various federal, state, local and industry-wide cannabis compliance topics will be outlined and discussed in this course.

CANN 03502: Marijuana Legalization and Decriminalization in Work, Leisure and Other Settings 3 s.h.
The problems, nature, and effects of cannabis legalization and/or decimalization within and across workplace settings and institutions such as families, leisure facilities, schools/higher education institutions, health care facilities/hospitals, transportation hubs, police departments, jails, and prisons will be explored. The course will emphasize the use of cannabis in social and institutional contexts, the legal implications of cannabis use within institutions, and approaches for counteracting and avoiding cannabis use including, community programs, and testing programs, and policies will be examined. Social control and programmatic approaches in the context of promoting a safe and productive environment and a part of regulatory compliance will be discussed.

CANN 03503: Cannabis Research, Program Evaluation, and Policy Development 3 s.h.
This course offers an applied approach to systematically collect and analyze data on the performance of programs and policies with a focus on determining whether a particular program or policy is achieving its goals. In this course, students will examine evaluation designs to better understand different programmatic and research assumptions to assist in program development and policymaking in the field of cannabis and the cannabis industry.

CMS 05381: PSYCHOLINGUISTICS 3 s.h.

PSY 01107: Essentials Of Psychology 3 s.h.
Students will be introduced to psychology, the scientific study of behavior. This course will highlight the key areas in psychology that help to explain human behavior. This course will include discussion of diverse topics such as, perception, learning, thinking, memory, motivation, emotion, stress, and health, personality, physiological processes, psychological disorders and treatment, development, intelligence, and social psychology.

PSY 01108: Essentials of Psychology for Pre-Health Students 3 s.h.
Prerequisites: Declared Pre-Health Concentration or enrolled in CMSRU Post-Bac in Premedical Sciences program
This specific Essentials of Psychology course is designed for students planning to attend medical school and take the MCAT, which includes a new section on Psychology. This class will prepare students to take that section of the MCAT. Students will be introduced to psychology, the scientific study of behavior. This course will highlight the key areas in psychology that help to explain human behavior. This course will include discussion of diverse topics such as perception, learning, thinking, memory, motivation, emotion, stress, and health, personality, physiological processes, psychological disorders and treatment, development, intelligence, and social psychology.

PSY 01199: Navigating Psychology 1 s.h.
Prerequisite: B.A. in Psychology or B.S. in Psychological Science as declared major
This course provides students with information and guidance regarding their future education in Psychology. This introductory class gives incoming Psychology students resources that they will need to guide their coursework, professional development, and research/employment to further their psychological education and future careers. This course will prepare students to make decisions that will tailor their Psychology program to their interests and goals. During this course, assessments are also taken as a part of larger program assessment.

PSY 01230: Psychology Of Personality 3 s.h.
Prerequisite: PSY 01107 or PSY 01108
Students study major theories of personality and techniques for measuring personality. Personality is that field of psychology that investigates the predispositions or inherited characteristics and the acquired or learned qualities that affect an individual.

PSY 01316: Behavioral Assessment And Measurement 3 s.h.
Prerequisite: PSY 02310
This course provides students with the knowledge and skills needed to conduct behavioral assessments and choose appropriate target outcomes and intervention strategies. Additionally, students will learn to objectively measure behavior, display data graphically, and experimentally evaluate the effectiveness of behavioral interventions. This course is one of the courses required for the Specialization in Behavioral Services for Children and Their Families in the psychology department.

PSY 01326: Perception 3 s.h.
Prerequisite: PSY 01107 or PSY 01108
This course involves the study of sensation and perception. Topics include the scientific study of sensory systems, classical and contemporary psychophysical methods, principles of perceptual organization, aftereffects, illusions and space perception.

PSY 01327: Cognitive Psychology 3 s.h.
Prerequisite: PSY 01107 or PSY 01108
This course involves the study of information processing. Its topics may include the history and methods of cognitive psychology, selection and processing of sensory information, pattern recognition, memory processes, language acquisition and cognition.

PSY 01424: Professional Issues In Applied Behavior Analysis 3 s.h.
Prerequisites: PSY 02305 (Concurrency Allowed) AND PSY 02310AND PSY 02320 AND PSY 02325
This course is a capstone course in Specialization for Behavioral Services for Children and their Families, providing an in-depth overview of innovative and empirically validated behavior assessment and intervention techniques aimed at promoting system-wide change. Students will be exposed to professional development as behavior analysts including ethical issues, career options and responsibilities, and development of clinical skills.

PSY 01425: Fieldwork in Applied Behavior Analysis 3 s.h.
Prerequisites: PSY 02305 AND PSY 02320 AND PSY 02325
Students should be matriculated in the Specialization for Behavioral Services for Children & Families OR the Post-Baccalaureate in ABA to enroll in this course due to limited enrollment. Students are assigned placements in applied settings under the supervision of a Board Certified Behavior Analyst (BCBA) to gain experience in the design and implementation of behavioral interventions. Students are required to complete 150 hours of supervised fieldwork in their assigned placements.

PSY 01499: Psychology Senior Capstone 1 s.h.
Prerequisite: Students must have at least 100 completed credits
This course provides students with information and guidance regarding their future careers in Psychology and the resources they will need to further their education and possible careers. During this course, assessments are also taken as a part of larger program assessment.

PSY 01500: Professional Skills for Behavior Analysts 3 s.h.
Prerequisites: Matriculation into the MA in ABA.
This course introduces students to the professional standards of the field of applied behavior analysis. This course emphasizes essential skills and strategies that students need to be successful professional behavior analysts. Topics include vital work habits, interpersonal relationships, business skills, applying behavioral knowledge, consulting repertoires, introduction to professional and scientific writing, and professional service. This course is the first course to be taken in the MA in the ABA program and will be offered annually.

PSY 01501: Independent Study in Psychology 3 to 6 s.h.

PSY 01510: Philosophy, History, and Conceptual Foundations of Behavior Analysis 3 s.h.
Prerequisites: Matriculation in the Master of Arts InApplied Behavior Analysis.
The course provides an in-depth examination of the philosophical and conceptual underpinnings of behavior analytic theory. Students will evaluate how behavior analysis as a conceptual system fits in the larger historical and conceptual contexts of philosophy, science, and psychology. Applications to behavior analytic problem solving and case conceptualization in applied setting will be emphasized.

PSY 01550: Clinical Research Practicum 3 s.h.
Prerequisites: PSY 01.500 AND PSY 01.510
This graduate level course will provide students with the pre-requisite skills needed to develop an independently executed research project evaluating applied behavior analytic techniques for changing behavior. In this course, students will meet with a Faculty Advisor regularly to read and review current literature to gain an appreciation and critical understanding of research in the area of Applied Behavior Analysis. Students will also work with more senior students to get experience with recruiting participants, executing a study protocol, collecting and coding data, and analyzing and interpreting data. Finally, students will lead discussions and review literature relevant to their own independent research project.

PSY 01564: Counseling Theory And Techniques I 3 s.h.
Prerequisite: Matriculation in the Master's Program in Clinical Mental Health Counseling
This course is designed to be an overview of several major theoretical approaches to psychotherapy, including: Humanistic-Existential, Behavioral, and Cognitive-Behavioral. The course will include didactic and experiential components, and will focus on developing the skills and knowledge necessary to use techniques from these theories in a professional context.

PSY 01566: Counseling Theory And Techniques II 3 s.h.
Prerequisite: PSY 09595 and PSY 01564 with grade of B- or above
This course is designed to be an overview of several major theoretical approaches to psychotherapy, including: Psychodynamic, Systems, Cognitive, and Interpersonal. The course will include didactic and experiential components, and will focus on developing the skills and knowledge necessary to use techniques from these theories in a professional context. In addition to these general skills, the course will also focus on the application of these techniques to specific populations of interest within the psychological community.

PSY 01570: Research Methodology And Statistics In Counseling Psychology 3 s.h.
This is a graduate level introduction to research methodology and statistics with special application of these principles to the practice of mental health counseling. Students will develop the skills necessary to critically evaluate and interpret research and statistics, thus allowing them to be excellent consumers of research as well as developing practice-relevant research projects.

PSY 01572: Research Methodology And Statistics In Counseling Psychology I: Basics 3 s.h.
Prerequisite: Matriculation in the Masters Program in Clinical Mental Health Counseling
This is a graduate level introduction to research methodology and statistics with special application of these principles to the practice of mental health counseling. Students will develop the skills necessary to critically evaluate and interpret research and statistics, thus allowing them to be excellent consumers of research as well as developing practice-relevant research projects.

PSY 01574: Research Methodology And Statistics In Counseling Psychology II: Applied 3 s.h.
Prerequisite: PSY 01572 with B- or above
In this graduate level course, students will learn how to apply the skills learned in Research Methodology & Statistics in Counseling Psychology I: Basic course through all of the steps required to propose an empirical project requiring either postulating a testable hypothesis and delineating the methodology used to test the hypothesis or to apply knowledge of research methodology to the empirical evaluation of counseling interventions with a single or small number of clients.

PSY 01610: Career And Lifestyle Development 3 s.h.
Advanced students will learn the major theories of career choice and development, gaining an understanding of the complex personal, organizational, and societal factors that impact upon career choice. Students will learn to understand occupational trends and occupational classification systems, and have the opportunity to study and administer various career interest batteries. Students will gain an appreciation for the changing nature of work and career focus across the life span, including predictable career transitions and challenges. Theoretical and self assessment techniques will be utilized to help students gain an understanding of the need for balance between work and personal life, and will provide insight into the theories and choices involved in leisure activity and in stress management practices. Experiential exercises and projects will be an integral aspect of the course leading to an appreciation not only of theory but of its application.

PSY 01612: Group Counseling And Psychotherapy 3 s.h.
Prerequisite: PSY 09595 and PSY 01624 with grade of B- or above
This course addresses fundamental issues concerning the development and dynamics of group counseling and provides the student with a background in group counseling theories and methods. Issues covered include group process components, the stages of group development and leadership styles and approaches. Methods for evaluating the effectiveness of group counseling are discussed.

PSY 01615: Professional Proseminar 1 s.h.
Prerequisites: Matriculation in the Master's Program in Clinical Mental Health Counseling
This seminar is intended to serve two purposes for students in the first year of training in the MA Program in Clinical and Counseling Psychology. First, students will be provided with the ability to discuss how the skills and knowledge they have acquired during their training should be integrated to form a coherent professional identity. Second, students will have the opportunity to gain more knowledge and understanding of the profession they are being trained in and how to become an active/contributing member to that profession. Current accreditation standards in the field place a particular emphasis on students developing a solid sense of professional identity, which includes knowledge of a) the history of the profession, b) current trends in the field, c) licensing and credentialing issues, and d) areas of work and influence in the field. This course will provide the vehicle for discussing and desseminating these issues.

PSY 01616: The Counseling Profession: Ethics And Professional Identity 3 s.h.
This course is designed to enrich the student's understanding of the counseling profession and the professional identity of counselors. The student will be exposed to the professional roles, functions, goals, and objectives of the counseling profession, as well as organizations and associations of the profession. Students will study the history and development of counseling as a profession and will examine current trends in counseling. Finally, the student will explore professional ethics and standards of practice (ACA, ASGW, AMHCA, NCAD) and will become familiar with professional licensure in New Jersey and national certifications (NBCC AND CCE) and with accreditations standards for counseling (CACREP). (For Summer 2011 the course is offered as web-assisted, with some content delivered online.)

PSY 01620: Legal, Ethical, and Professional Issues In Counseling 3 s.h.
Prerequisite(s): Matriculation in the MA in CMHC, OR the the CAGS in CMHC
This course covers legal and ethical issues involved in the delivery of human services and counseling. Issues addressed include ethical standards for therapists, the role of the mental health professional in the legal system, and standards of ethical practice for counselors. The student will consider the possible legal consequences of treatment decisions and approaches. This course will provide an understanding of all aspects of professional functioning including history, roles, ethics, standards and credentialing.

PSY 01623: Psychopathology I: Diagnosis And Epidemiology 3 s.h.
Prerequisite(s): Matriculation in the MA in CMHC, OR the CAGS in CMHC, OR PhD in Clinical Psychology
This course reviews the diagnostic criteria for the major categories of psychopathology included in the DSM-IV-TR. The emphasis for course is reviewing the prevalence rates and differential diagnosis for the various categories. The course reviews the concepts and skills necessary to provide a five axis diagnosis for adults and children.

PSY 01624: Psychopathology II: Conceptualization And Etiology 3 s.h.
Prerequisites: Matriculation in the MA in CMHC, OR the CAGS in CMHC, OR the PhD in Clinical Psychology AND a B- or above in PSY 01623 Psychopathology I
This course reviews the diagnostic criteria for the major categories of psychopathology included in the DSM-IV-TR. The course emphasizes the etiological facators for the various diagnostic categories as well as the course and prognosis for each disorder. Current research for evidence based interventions for each of the disorders will also be reviewed.

PSY 01630: Family Systems Theory And Family Therapy 3 s.h.
Pre-requisites: Matriculation in the MA in CMHC, OR Matriculation in the CAGS in CMHC AND permission from program coordinator
This graduate level course will explore the importance of family therapy in the human service delivery system. The course will emphasize several areas. First, the course will review the major theoretical approaches to family therapy as well as the foundation concepts of general system theory. Second, the skills and techniques unique to family therapy will be reviewed. This aspect of the course will utilize role plays to demonstrate specific intervention strategies. Third, the course will review assessment tools and evaluation research of family therapy. Finally, the ethical and documentation issues involved in a family therapy will be discussed.

PSY 01650: Practicum In Counseling 1 to 9 s.h.
Prerequisite: PSY 01624 and PSY 01566 and PSY 01620
Students will be placed in human service settings where they will provide, under supervision, counseling and related services. Both on-site and Psychology Department supervisors will monitor student progress. Students will work with clients to establish goals for change, employ appropriate counseling techniques and evaluate goal attainment.

PSY 01660: Practicum In Applied Behavior Analysis I 3 s.h.
Prerequisite(s): PSY 02670 and Matriculation in the MA in Applied Behavioral Analysis
In this course students are placed in a community agency to apply their knowledge and skills in applied behavior analysis. Students will be required to meet weekly with the instructor of the course.

PSY 01661: Practicum In Applied Behavior Analysis II 3 s.h.
Prerequisites: PSY 01660
In this course students are required to complete intensive supervised fieldwork in a community agency to further develop their clinical skills in applied behavior analysis. Focus will be placed on advanced assessment, intervention, and maintenance programming, treatment integrity, consultation, and staff supervision and training. Students will be required to meet weekly with the instructor of the course.

PSY 01685: Master's Thesis In Psychology I 3 s.h.
Prerequisite: PSY 01574 with B- or above
This course requires the design of an independently executed research project. The project will be supervised by a member of the Psychology Department. The student may choose a group design, single subject ABA design or Case Study for their project. The thesis will include a literature review, design of the project and the initial implementation.

PSY 01687: Master's Thesis In Psychology II 3 s.h.
Prerequisite: PSY 01685
This course requires the completion of the independently executed research project that was initiated in Master's Thesis in Psychology I. The project will be supervised by a member of the Psychology Department. Completion of the course will include the production of a comprehensive final product that needs to be approved by the student's project supervisor.

PSY 01750: Multicultural Perspectives 3 s.h.
Prerequisite(s): Matriculation in Ph.D. Program in Clinical Psychology
The purpose of this course is to ensure that students know and are able to define culture, assimilation, acculturation, and cultural differences, identify different types of diverty, explores challenges and benefits of diversity, recognize the problem of sterotyping, prejudice, bias, and discrimination and the ways to avoid them, and describe ethnocentrism and its relationships to diveresity. Students will gain specific competencies necessary to work effectively with an incresingly diverse population. This graduate level lcourse is required for student in the Ph.D. program in Clinical Psychology.

PSY 01850: DISSERTATION RESEARCH I 1 s.h.
Prerequisite: Grade of Pass in PSY 03814
The purpose of this course is to for students to begin to work with their research advisors on their dissertations. At the end of this course, students are expected to have completed at least one draft of the introduction of their research proposal. This course is restricted to students matriculated into the doctoral program in clinical psychology.

PSY 01852: DISSERTATION RESEARCH II 1 s.h.
Prerequisites: PSY 01.850 Dissertation Research I
The purpose of this course is to for students to continue to work with their research advisors to develop a high-quality, scientifically rigorous research study. At the completion of this course, students are expected to have written a complete proposal including the introduction, background, and methodology for the study. This course is restricted to students matriculated into the doctoral program in clinical psychology.

PSY 01853: DISSERTATION RESEARCH III 1 s.h.
Prerequisite: Grade of Pass in PSY 01852
The purpose of this course is to for students to continue to work with their research advisors to develop a high-quality, scientifically rigorous research study. At the completion of this course, students are expected to have begun data collection. This course is restricted to students matriculated into the doctoral program in clinical psychology.

PSY 01854: DISSERTATION RESEARCH IV 1 s.h.
Prerequisite: Grade of Pass in PSY 01853
The purpose of this course is to for students to complete work on their dissertation research project. At the end of this course, students are expected to have completed a draft of their research project. This course is restricted to students matriculated into the doctoral program in clinical psychology.

PSY 01855: Dissertation Research 1 to 6 s.h.
Prerequisites: Grade of B or higher in PSY 03815 or Permission from instructor
The purpose of this course is for students to begin to develop an empirical project that will result in a manuscript containing a relevant literature review (Introduction), research aims/hypotheses, a detailed accounting of how info/data were collected or compiled (Method section), an accounting of the statistical analyses applied and the results, with a discussion portion that adequately explores the implications of the findings. This course is restricted to students matriculated into the doctoral program in Clinical Psychology.

PSY 01856: Dissertation Continuation 1 s.h.
Prerequisite(s): Matriculation in doctoral program in clinical psychology and Completion of all dissertation research credits required for the degree and Departmental and Dean's office approval
Continuation of supervised research leading to a doctoral dissertation.

PSY 02305: Applied Behavior Analysis 3 s.h.
Prerequisite: PSY 02310
This course deals with the principles, procedures and utility of behavior modification in normal and clinical settings.

PSY 02310: Learning And Behavior 3 s.h.
Prerequisites: (PSY 01107or PSY 01108) or Matriculation in the Post-Baccalaureate Certificate in Applied Behavior Analysis
This course provides an overview of the experimental analysis of behavior with minor attention to other theories of learning. Topics may include classical conditioning, operant conditioning, and schedules of reinforcement.

PSY 02500: Basic Principles Of Behavior 3 s.h.
Prerequisites: Matriculation into MA or CAGS in Applied Behavior Analysis
This course is a graduate course in the basic principles of behavior. Course content includes the historical basis of behavior analysis, the distinction between respondent/classical and operant conditioning, and the basic principles, processes, and concepts of behavior analysis.

PSY 02510: Research Methods In Behavior Analysis 3 s.h.
Prerequisite: PSY 02500 and Matriculation in the MA or CAGS in Applied Behavioral Analysis
This course provides students with the knowledge and skills to choose and implement an appropriate experimental design to evaluate the success of behavioral interventions.

PSY 02513: Clinical Addictions Assessment 3 s.h.
Prerequisite(s): PSY 09595 or PSY 03710
This course focuses on the assessment and diagnosis of common addictive disorders. Students will learn how to develop a therapeutic alliance, conduct a comprehensive biopsychosocial assessment, and develop systematic diagnostic summaries that include differential diagnosis and attention to co-occurring disorders such as gambling, eating disorders, and sexual compulsivity as well as mental health disorders. Students will learn how to evaluate a variety of assessment instruments, and to assess the impact of age, race, gender, social class, culture, ethnicity, spirituality, religion, sexual orientation, national origin, and physical and mental ability on recovery from addictive disorders. This course is open to all students who have completed the Introduction to Counseling course, but it is a required course for those in the Addiction Professional Certification Program. Attendance at 8 12 step meetings will be required.

PSY 02520: Assessment And Interventions For Social Skills And Relationships In Children 3 s.h.
This course is a graduate course in examining the development of social and emotional competence in children, the assessment of social skill deficits, and various interventions aimed at improving social skills and relationships in children and children with special needs.

PSY 02523: Clinical Addictions Treatment 3 s.h.
Building upon the content learned in the previous Clinical course, this practice-based course focuses on addiction counseling skills for work with individuals, couples, families, and groups, particularly for clients presenting with co-occurring disorders. Students will learn strengths-based, evidence-based interventions including crisis intervention, Motivational Interviewing, and Cognitive Behavioral approaches. As in all Addiction Professional Program courses, the impact of age, race, gender, social class, culture, ethnicity, spirituality, religion, sexual orientation, national origin, and physical and mental ability on treatment for addictive and co-occurring disorders will be infused throughout the course content. Attendance at 8 12 step meetings will be required.

PSY 02600: ABC's Of Applied Behavior Analysis 3 s.h.
This course provides a graduate level introduction to the field of behavior analysis. The course will cover the history of the field,behavorial assessment,and behavorial intervention. The focus of this course is on knowledge of the field and not the application of skills.

PSY 02610: APPLIED BEHAVIOR ANALYSIS 3 s.h.
Prerequisite(s): PSY 02500 and PSY 02620 and Matriculation in MA or CAGS in Applied Behavioral Analysis
This course is a graduate course in applied behavior analysis. Course content includes the conceptual foundation of applied behavior analysis, the empirical support of the interventions used in the change and maintenance of human behavior, and the skillful application and implementation of various techniques related to respondent and operant conditioning

PSY 02620: Behavioral Assessment & Functional Analysis 3 s.h.
Corequisite: PSY 02500 Prerequisite(s): Matriculation in the MA or CAGS in Applied Behavioral Analysis
This course teaches students how to conduct a comprehensive assessment for behavior problems, to identify, with the client, the appropriate goals and objectives for intervention, to conduct the appropriate assessment techniques, and to select the appropriate measurement procedures to evaluate outcomes.

PSY 02630: Experimental Foundations of Behavior Therapy of Psychology 3 s.h.
Prerequisite: Matriculation into Ph.D. Program in Clinical Psychology
This course provides Ph.D. students in Clinical Health Psychology wioth advanced and highly specialized knowledge in the experimental analysis of human behavior, specifically as it relates to problems of clinical relevance. Students will matter the conceptural underpinnings oifo the behavior therapies through an examination of complex behavior problems from a behavior analytical and rigorously experimental perspective, including but not limited to behavioral economic, behavioral momentum, variability, Skinner's analysis of verbal behavior, and Relational Frame Theory (RFT). This course is restricted to students matriculated into the doctorial program in clinical psychology.

PSY 02633: Case Management in Addictions 3 s.h.
Prerequisite(s): PSY 02513 and PSY 02523
Building upon the content learned in previous required Addiction Professional Certification courses, this course focuses on case management skills needed for work with clients with substance use disorders (SUDs), co-occurring disorders, and other psychosocial, health or life issues. Students will learn about coordinated care systems and the importance of treatment teams, including how to properly consult with supervisors, counselors, professionals, and/or other service providers to assure comprehensive, quality care for clients. Students will gain skills in researching, accessing, and referring for inter- or intra-agency services. Topics such as HIV and the wide variety of community resources available in New Jersey will be covered, in addition to NJ systems for Families and Children, Disabilities, Mental Health, Employment, and Criminal Justice. As in all the Addictions Professional Certification Program courses, the impact of age, race, gender, social class, culture, ethnicity, spirituality, religion, sexual orientation, national origin, and physical and mental ability on recovery from addictive disorders will be infused throughout the course content. This course is open to all Addiction students who have completed the course prerequisites, and it is required for the Addiction Professional Certification. Attendance at 8 12 step meetings will be required.

PSY 02643: Ethical Responsibility and Professional Development in Addictions 3 s.h.
Prerequisite(s): PSY 02513 and PSY 02523
This course focuses on professional responsibility and development for professionals working with clients dealing with substance use disorders (SUDs) and any co-occurring disorders or life issues. Students will learn the ethical standards, as well as the ethical theory that should ground their decision-making. Federal, state, and licensing act regulations will be covered, as will the benefits and best practices of clinical supervision and professional networking. Students will become familiar with core functions and competencies, and the ways in which ongoing education will enhance their professional development. Students will also identify the personal and professional risks to health and mental health for social workers and addictions counselors, and learn self-care and other strategies to ensure professional effectiveness. The ethical and legal issues related

to age, race, gender, social class, culture, ethnicity, spirituality, religion, sexual orientation, national origin, and physical and mental ability, and the ways in which counselors can work toward destigmatizing SUDs, will be infused throughout the course content. Finally, students will participate in practical preparation for licensing, including mock exams, case presentations, application completion, and job applications. This course is open to all Addiction Professional program students who have completed the course prerequisites, and it is required for the Addiction Professional Certificate.

PSY 02660: Research Project In Applied Behavior Analysis I 3 s.h.
Prerequisite: PSY 02.510 and PSY 01.550
This graduate level course requires the design of an independently executed research project evaluating applied behavior analytic techniques for changing behavior. In this course students will work from foundational skills acquired in the prerequisite course in Research Methods in Behavior Analysis (PSY 02510) and with close instructor consultation to fully design, write up, and defend the proposal of an empirical study.

PSY 02661: Special Topics Applied Behavior Analysis 3 s.h.
Prerequisite: PSY 02500 and PSY 01610
This course is a graduate seminar course providing in-depth coverage of special topics in the practice of Applied Behavior Analysis. Course content will reflect the most current issues involving the design and implementation of behavioral interventions for specific populations and circumstances. Course topics may include but are not limited to: verbal behavior, curriculum design for children with autism, behavioral interventions for basic life skills, behavior analysis in education, behavioral interventions for children with emotional/behavioral disorders, behavior analysis of addiction, legal issues for applied behavior analysts, early intensive behavioral intervention, and large-scale behavioral intervention.

PSY 02662: Research Project in Applied Behavior Analysis II 3 s.h.
Prerequisite: PSY 02660
This capstone graduate level course requires the student to write and defend their completed, independently executed research project evaluating applied behavior analytic techniques for changing behavior. In this course students will complete their independent research project requirement that was proposed in the prerequisite course in Research Project in Applied Behavior Analysis I (PSY 02660) with close instructor consultation. This is a required course for students pursuing the Certificate of Graduate Studies (COG) in Research and Leadership in Applied Behavior Analysis.

PSY 02670: Ethics In Applied Behavior Analysis 3 s.h.
Prerequisite(s): PSY 02610 and PSY 02620 and Matriculation in MA or CAGS Applied Behavioral Analysis
This graduate level course is required for students in the Master's of Arts program in Applied Behavior Analysis. The purpose of this course is to ensure that students know and are able to apply the Behavior Analyst Certification Board's (BACB) Guidelines for Responsible Conduct for Behavior Analysts. In addition, students will be taught the BACB Professional Disciplinary and Ethical Standards.

PSY 02671: Behavioral Consultation, Supervision, and Management 3 s.h.
Prerequisite(s): PSY 02670 and Matriculation in the MA or CAGS in Applied Behavioral Analysis
The purpose of this course is to provide students with best practice skills in behavior analytic personnel supervision, management, and consultation. In this course students will learn to provide effective supervision, train staff to competency, and improve personnel performance. Students will also demonstrate consultative competencies involving rapport building, effective communication, problem identification and analysis, intervention selection, and outcome evaluation. This course is required for all students in the Master of Arts in Applied Behavior Analysis program.

PSY 02672: Performance Management 3 s.h.
Prerequisites: PSY 02671 & Acceptance in the Concentration in Research & Leadership in Applied Behavior Analysis
This advanced graduate level course provides an overview of contemporary research and practice in the field of Performance Management (PM), an area of specialization within Applied Behavior Analysis (ABA) most closely aligned with organizational behavior management and personnel/human resource management. The purpose of this course is to provide students with the practical skills needed to apply the fundamental principles of ABA to a variety of performance problems in organizational settings. This is a required course for students pursuing the Certificate of Graduate Study (COGS) in Research and Leadership in ABA

PSY 02680: Advanced Practice In Applied Behavior Analysis 3 s.h.
Prerequisite(s): PSY 02500 and PSY 02510 and PSY 02610 andPSY 02620 and PSY 02670 and PSY 02690 and Permission of Program Advisor
This course provides in-depth hands-on demonstration and practice of a variety of behavior analytic clinical techniques. Students will demonstrate competencies in a variety of clinical skills including those involving specific behavior change procedures, broad behavior change systems and the implementation, management, and supervision of those procedures.

PSY 02690: Comprehensive Exam in Applied Behavior Analysis 1 s.h.
Prerequisite(s): PSY 01510 and PSY 02500 and PSY 02620 and PSY 02610 and PSY 02510
This graduate level course requires the student to demonstrate that they have met the requirements for continuing in the Master of Arts in Applied Behavior Analysis. The students will be required to satisfactorily complete a written and oral comprehensive exam to pass this course. The comprehensive exams will cover all coursework completed up to that point. This is a required course for students pursuing the Certificate of Graduate Studies (COGS) in Research in the Master's of Arts program in Applied Behavior Analysis.

PSY 02706: Research Methods 3 s.h.
Prerequisite: Matriculation into the Ph.D. in Clinical Psychology Program.
This doctoral level course provides an overview of group research methodologies frequently used in professional psychological research. Topics covered in this course include validity and reliability, systematic observation, self report measures, sampling techniques, control and comparison groups, treatment evaluation strategies, and research ethics. This course is designed to provide students the tools to design their own research in the discipline of professional psychology as well as the ability to evaluate research generated by others. This course is restricted to students matriculated into the doctoral program in clinical psychology.

PSY 02710: Advanced Experimental Analysis of Behavior 3 s.h.
Prerequisite: PSY 02500
This advanced, graduate level course requires the student to get a more in depth understanding of some of the more complex topics addressed in the Experimental Analysis of Behavior that are initially introduced in the pre-requisite course, Basic Principles of Behavior.

PSY 03200: Abnormal Psychology 3 s.h.
Prerequisite: PSY 01107 or PSY 01108
Abnormal Psychology is a division of the science of psychology that investigates disordered behaviors, deficiencies in behavior capacities, and the persons exhibiting them. This course of Abnormal Psychology is concerned with the application of the methods, concepts, principles and findings of psychological research to deviant behavior. It is also concerned with perception, learning, development and social factors as related to disturbed behavior and experiences of individuals.

PSY 03205: Intake And Interviewing Skills In Psychology 3 s.h.
Prerequisites: (PSY 01107 or PSY 01108) and PSY 03200
This course is designed to prepare undergraduates to be able to perform an initial interview or intake in an entry level, human service position. Topics include basic skill development, understanding of content and process in interviewing, family interviews, use of standard intake procedures, and ethical considerations in interviewing.

PSY 03518: Psychological Evaluation And Counseling Services To Combat Alcohol And Drug Abuse 3 s.h.
This course provides students with information needed to evaluate and counsel drug and/or alcohol dependent or addicted individuals and their families. Topics covered include strategies necessary for the coordination and delivery of intervention and referral services in a school setting.

PSY 03620: Cognitive-Behavioral Treatment Strategies 3 s.h.
Prerequisites: Matriculation into CAGS in Clinical Mental Health Counseling OR Minimum of B- in PSY 01650
This course is designed to be an overview of cognitive-behavioral treatment and theory. The course will include didactic and experiential components, and will focus on developing the skills and knowledge necessary to use cognitive-behavioral treatment in a professional context. In addition to these general skills, the course will also focus on the application of these techniques to specific populations of interest within the psychological community.

PSY 03624: Psychopathology Of Children And Adolescents 3 s.h.
Prerequisites: Matriculation into MA or CAGS in Clinical Mental Health Counseling OR MA in School Psychology OR MA in Applied Behavior Analysis OR Minimum of B- in PSY 01650
This course includes relating personality theory to psychopathology, diagnostic nomenclature in child psychopathology, review of major psychotherapeutic approaches for children, techniques for working with parents and treatment facilities away from home. This course may include field trips to appropriate agencies and as well as case preparation.

PSY 03701: Assessment I: Psychometrics and Cognitive Testing 3 s.h.
Prerequisite: Matriculation into Ph.D. Program in Clinical Psychology
This course is part of the two-course sequence and provides the foundational knowledge needed to critically evaluate test measures and their uses. In additiona. students will gain exposure to a wide range of cognitive assessment tools and strategies. Students will be taught the basic assessment skills necessary to conduct an initial consultation regarding cognitive issues, test selection, standardized test administration, test scoring & interpretaation using appropriate normative data while considering cultural factors, integrative report writing, and communications of results and treatment

recommendations. Students will gain also be introduced to ethical and professional issues related to cognitive assessment, and they will be expected to demostrate their skills as part of their classroom experience.

PSY 03704: Assessment II: Individual Differences and Personality 3 s.h.
Prerequisite: Grade of B- or better in PSY 03.701
This class is designed to promote an understanding of the unique individual and contextual factors that influences individual development and personality. Issues related to personality test development and use will examined in-depth. Student will have opportunities to administere, score and interpret various measures that provide information about important individual differences and personality funtioning. This course will also cover the us eof normative data and cultural factors during the assesement process. Students will gain experience with integrative report writing and the communication of results and treatment recommendations. Students will be introduced to ethical and professional issues related to personality assessment.

PSY 03710: Intervention I: Foundational Clinical Skills 3 s.h.
Prerequisites: Matriculation into the Ph.D. Program in Clinical Psychology.
The course will focus on an introduction to the pan-theoretical skills that may enhance the development of rapport in context of a therapeutic relationship between therapist and client. This course will also review mental status exams, the content areas of the initial intake interview, assessing for suicide and homicide risk, and basic conceptualization skills. Students are expected to demonstrate these skills through use of roleplays and active learning processes.

PSY 03712: Intervention II: Evidence-Based Interventions with Adults 3 s.h.
Prerequisites: Grade of B- or better in PSY 03.710 Intervention I: Foundational Clinical Skills
This course is designed to be an overview of the major theoretical approaches to adult psychotherapy including: Behavioral, Cognitive, Humanistic-Existential, and Psychodynamic traditions. The course will include didactic and experiential components, and will expose students to the fundamental aspects of each theory and treatment approach. The ultimate goal is for students to develop the skills and knowledge necessary to use techniques from these theories in a professional context. This course is restricted to students matriculated into the doctoral program in clinical psychology.

PSY 03715: Intervention III: Evidence-Based Interventions with Children & Adolescents 3 s.h.
Prerequisites: Matriculation in Ph.D. Program in Clinical Psychology
This course provides an intensive overview of an ecological approach to child, adolescent, and family therapy. Starting with the integration of a developmental perspective into clinical practice, the material in this course reviews different models of therapy for children, adolescents, and families. The remainder of the course focuses on learning the evidence-based interventions for specific disorders unique to childhood and adolescence. Issues of prevention of mental health issues in children and adolescents are reviewed. This course is restricted to students matriculated into the doctoral program in clinical psychology.

PSY 03717: Advanced Cognitive-Behavioral Assessment and Treatment 3 s.h.
Prerequisite(s): Matriculation in Ph.D. Program in Clinical Psychology
This class will allow students in the Doctoral Program in Clinical Psychology to develop their skills in Cognitive-Behavioral Treatment at a deeper level and learn to apply these skills to specific populations and settings. Additionally, this class will allow students to learn specific treatment protocols for specific types of disorders and in non-traditional settings and with unique populations.

PSY 03721: Professional Proseminar I 1 s.h.
Prerequisites: Matriculation in the Ph.D. Program in Clinical Psychology
The seminar is intended allow students to explore emerging areas and build competencies consistent with emerging trends in clinical psychology. Additionally, students will be introduced to specific types of competencies that do not lend them self to the comprehensiveness of a traditionally structured course. Finally, the course serves as a place for professional discourse and growth for students as they progress through the program. This course is restricted to students matriculated into the doctoral program in clinical psychology.

PSY 03722: Professional Proseminar II 1 s.h.
Prerequisite: Grade of Pass in PSY 03721
The seminar is intended allow students to explore emerging areas and build competencies consistent with emerging trends in clinical psychology. Additionally, students will be introduced to specific types of competencies that do not lend them self to the comprehensiveness of a traditionally structured course. Finally, the course serves as a place for professional discourse and growth for students as they progress through the program. This course is restricted to students matriculated into the doctoral program in clinical psychology.

PSY 03723: Professional Proseminar III 1 s.h.
Prerequisite: Grade of Pass in PSY 03722
The seminar is intended allow students to explore emerging areas and build competencies consistent with emerging trends in clinical psychology. Additionally, students will be introduced to specific types of competencies that do not lend them self to the comprehensiveness of a traditionally structured course. Finally, the course serves as a place for professional discourse and growth for students as they progress through the program. This course is restricted to students matriculated into the doctoral program in clinical psychology.

PSY 03724: Professional Proseminar IV 1 s.h.
Prerequisite: Grade of Pass in PSY 02723
The seminar is intended allow students to explore emerging areas and build competencies consistent with emerging trends in clinical psychology. Additionally, students will be introduced to specific types of competencies that do not lend them self to the comprehensiveness of a traditionally structured course. Finally, the course serves as a place for professional discourse and growth for students as they progress through the program. This course is restricted to students matriculated into the doctoral program in clinical psychology.

PSY 03725: Professional Proseminar V 1 s.h.
Prerequisite: Grade of Pass in PSY 03724
Students enrolled in Doctoral Program in Clinical Psychology are required to enroll in one section of Professional Proseminar every Fall and Spring semester during their first four years in the program. This is the fifth proseminar in that sequence. The seminar is intended allow students to explore emerging areas and build competencies consistent with emerging trends in clinical psychology. Additionally, students will be introduced to specific types of competencies that do not lend them self to the comprehensiveness of a traditionally structured course. Finally, the course serves as a place for professional discourse and growth for students as they progress through the program. This course is restricted to students matriculated into the doctoral program in clinical psychology.

PSY 03726: Professional Proseminar VI 1 s.h.
Prerequisite: Grade of Pass in PSY 03725
Students enrolled in Doctoral Program in Clinical Psychology are required to enroll in one section of Professional Pro seminar every Fall and Spring semester during their first four years in the program. This is the sixth proseminar in that sequence. The seminar is intended allow students to explore emerging areas and build competencies consistent with emerging trends in clinical psychology. Additionally, students will be introduced to specific types of competencies that do not lend them self to the comprehensiveness of a traditionally structured course. Finally, the course serves as a place for professional discourse and growth for students as they progress through the program. This course is restricted to students matriculated into the doctoral program in clinical psychology.

PSY 03727: Professional Proseminar VII 1 s.h.
Prerequisite: Grade of Pass in PSY 03726
Students enrolled in Doctoral Program in Clinical Psychology are required to enroll in one section of Professional Pro seminar every Fall and Spring semester during their first four years in the program. This is the seventh proseminar in that sequence. The seminar is intended allow students to explore emerging areas and build competencies consistent with emerging trends in clinical psychology. Additionally, students will be introduced to specific types of competencies that do not lend them self to the comprehensiveness of a traditionally structured course. Finally, the course serves as a place for professional discourse and growth for students as they progress through the program. This course is restricted to students matriculated into the doctoral program in clinical psychology.

PSY 03728: Professional Proseminar VIII 1 s.h.
Prerequisites: Grade of 'Pass' in PSY 02.727 Professional Proseminar VII.
Students enrolled in Doctoral Program in Clinical Psychology are required to enroll in one section of Professional Proseminar every Fall and Spring semester during their first four years in the program. This is the eighth proseminar in that sequence. The seminar is intended allow students to exploroe emerging area and build competencies consistent with emerging trensd in clinical psychology. Additionally, students will be introduced to specific types of competencies that do not lend themself to the comprehensiveness of a traditionally structured course. Finally, the course serves as a place for professional discoursse and growth for student as they progress through the program. This cours is restricted to students matriculated into the doctoral program in clinical psychology.

PSY 03740: Professional, Ethical, and Legal Issues in Clinical Psychology 3 s.h.
Prerequisite: Matriculation into the Clinical Psychology Ph.D. program.
This course covers ethical, legal, and professional issues involved in the discipline of psychology. Students will learn about historical and contemporary issues shaping the field of psychology and the training/supervision requirements needed to ethically/legally engage in various roles. Students will be challe.nged to actively apply the AP A principles and ethical standards through a variety of exercises. State and Federal laws and regulations, including landmark legal cases, will be examined in-depth. Students will consider the possible legal consequences of their behaviors/decisions. This course is restricted to students matriculated into the doctoral program in clinical psychology.

PSY 03742: Introductory Practicum 3 s.h.
Prerequisites: Grade of B- or better in PSY 03.703Assessment II: Cognitive AND PSY 03.712Intervention II: Evidence-Based Interventions with Adults
The Introductory Practicum is designed to let students develop intake, diagnostic, and assessment skills that they have learned during the first year in the program. Students will first shadow one of the more advanced clinical students and assist them in a clinical evaluation and assessment. Following this, student will then be expected to conduct their own evaluation independently. Additional experiences may also be available. Students will also be expected to engage in regular supervision provided by their practicum supervisor. This course is restricted to students matriculated into the doctoral program in clinical psychology.

PSY 03744: Foundational Practicum 3 s.h.
Prerequisite: Grade of Pass in PSY 03742
The Practicum is designed to provide students with a vehicle for obtaining practical experience and training to become competent clinical psychologists. Students will be assigned to either an internal or external practicum site. At that site, they will conduct clinical evaluations, assessments, psychotherapy and other work appropriate to the role of a clinical psychologist. The Foundation Practicum sequence is designed such that students will develop foundational clinical skills related to their clinical work. Students will also be expected to engage in regular individual and group supervision provided by their practicum supervisor. This course is restricted to students matriculated into the doctoral program in clinical psychology.

PSY 03746: Foundational Practicum II 3 s.h.
Prerequisite: Grade of Pass in PSY 03744
The Practicum is designed to provide students with a vehicle for obtaining practical experience and training to become competent clinical psychologists. Students will be assigned to either an internal or external practicum site. At that site, they will conduct clinical evaluations, assessments, psychotherapy and other work appropriate to the role of a clinical psychologist. The Foundation Practicum sequence is designed such that students will develop foundational clinical skills related to their clinical work. Students will also be expected to engage in regular individual and group supervision provided by their practicum supervisor. This course is restricted to students matriculated into the doctoral program in clinical psychology.

PSY 03748: Foundational Practicum III 3 s.h.
Prerequisite: Grade of Pass in PSY 03746
The Practicum is designed to provide students with a vehicle for obtaining practical experience and training to become competent clinical psychologists. Students will be assigned to either an internal or external practicum site. At that site, they will conduct clinical evaluations, assessments, psychotherapy and other work appropriate to the role of a clinical psychologist. The Foundation Practicum sequence is designed such that students will develop foundational clinical skills related to their clinical work. Students will also be expected to engage in regular individual and group supervision provided by their practicum supervisor. This course is restricted to students matriculated into the doctoral program in clinical psychology.

PSY 03800: Intermediate Practicum 3 s.h.
Prerequisite: Grade of Pass in PSY 03748
The Practicum is designed to provide students with a vehicle for obtaining practical experience and training to become competent clinical psychologists. Students will be assigned to either an internal or external practicum site. At that site, they will conduct clinical evaluations, assessments, psychotherapy and other work appropriate to the role of a clinical psychologist. The Intermediate Practicum sequence is designed such that students will develop increasingly more complex and advanced clinical skills related to their clinical work. Students will also begin to develop skills consistent with their chosen concentrations. In addition to their clinical work, students will also be expected to engage in regular individual and group supervision provided by their practicum supervisor. This course is restricted to students matriculated into the doctoral program in clinical psychology.

PSY 03802: Intermediate Practicum II 3 s.h.
Prerequisite: Grade of Pass in PSY 03800
The Practicum is designed to provide students with a vehicle for obtaining practical experience and training to become competent clinical psychologists. Students will be assigned to either an internal or external practicum site. At that site, they will conduct clinical evaluations, assessments, psychotherapy and other work appropriate to the role of a clinical psychologist. The Intermediate Practicum sequence is designed such that students will develop increasingly more complex and advanced clinical skills related to their clinical work. Students will also begin to develop skills consistent with their chosen concentrations. In addition to their clinical work; students will also be expected to engage in regular individual and group supervision provided by their practicum supervisor. This course is restricted to students matriculated into the doctoral program in clinical psychology.

PSY 03804: Intermediate Practicum III 3 s.h.
Prerequisite: Grade of Pass in PSY 03802
The Practicum is designed to provide students with a vehicle for obtaining practical experience and training to become competent clinical psychologists. Students will be assigned to either an internal or external practicum site. At that site, they will conduct clinical evaluations, assessments, psychotherapy and other work appropriate to the role of a clinical psychologist. The Intermediate Practicum sequence is designed such that students will develop increasingly more complex and advanced clinical skills related to their clinical work. Students will also begin to develop skills consistent with their chosen concentrations. In addition to their clinical work, students will also be expected to engage in regular individual and group supervision provided by their practicum supervisor. This course is restricted to students matriculated into the doctoral program in clinical psychology.

PSY 03812: THESIS RESEARCH I 1 s.h.
Prerequisite: Grade of B- or better in PSY 02. 706 Research Methods
The purpose of this course is for students to being to work with their research advisor on their master''s thesis. At the end of this course, students are expected to have completed at least one draft of the Introduction and Method sections of their research proposal. This course is restricted to students matriculated into the doctoral program in Clinical Psychology.

PSY 03814: Thesis Research II 1 s.h.
Prerequisite: Grade of tt"Passtt" in PSY 03.812 Thesis Research I
The purpose of this course is for students to compete their work with their research advisor on their master\'s thesis. At the end of this course, students are expected to have completed a final copy of their master\'s thesis. This course is restricted to students matriculated into the doctoral program in Clinical Psychology.

PSY 03815: Thesis Research 1 to 2 s.h.
Prerequisite: Grade of B- or better in PSY 02706
The purpose of this course is for students to begin to develop an empirical project that will ultimately result in a manuscript containing a relevant literature review (Introduction), research aims/hypotheses, a detailed accounting of how information/data were collected or compiled (Method section), an accounting of the statistical analyses applied, and the results, with a discussion portion that adequately explores the implications of the findings. This course is restricted to students matriculated into the doctoral program in Clinical Psychology.

PSY 03820: Advanced Practicum 3 to 7 s.h.
Prerequisite: Grade of Pass in PSY 03804
The Practicum is designed to provide students with a vehicle for obtaining practical experience and training to become competent clinical psychologists. Students will be assigned to either an internal or external practicum site. At that site, they will conduct clinical evaluations, assessments, psychotherapy and other work appropriate to the role of a clinical psychologist. The Advanced Practicum sequence is designed such that students will develop increasingly more complex and advanced clinical skills related to their chosen concentration. Students will also have the opportunity to supervise other students in the program to begin to develop their applied supervisory skills. In addition to their clinical work, students will also be expected to engage in regular individual and group supervision provided by their practicum supervisor. This course is restricted to students matriculated into the doctoral program in clinical psychology.

PSY 03822: Advanced Practicum II 3 to 7 s.h.
Prerequisite: Grade of Pass in PSY 03820 Advanced Practicum I
The Practicum is designed to provide students with a vehicle for obtaining practical experience and training to become competent clinical psychologists. Students will be assigned to either an internal or external practicum site. At that site, they will conduct clinical evaluations, assessments, psychotherapy and other work appropriate to the role of a clinical psychologist. The Advanced Practicum sequence is designed such that students will develop increasingly more complex and advanced clinical skills related to their chosen concentration. Students will also have the opportunity to supervise other students in the program to begin to develop their applied supervisory skills. In addition to their clinical work, students will also be expected to engage in regular individual and group supervision provided by their practicum supervisor. This course is restricted to students matriculated into the doctoral program in clinical psychology.

PSY 03824: Advanced Practicum Continuation 1 s.h.
Prerequisite(s): Matriculation in doctoral program in clinical psychology and Completion of all credits required for the degree and Departmental and Dean's office approval
Continuation of supervised advanced practicum experience in clinical psychology.

PSY 03830: Health Psychology 3 s.h.
Prerequisites: Matriculation in Ph.D. Program in Clinical Psychology
This course will provide doctoral students with a foundation of clinical health psychology. Theories of health behaviors will be introduced in relation to behavioral risk factors. Focus will be on assessment and treatment of primary behavioral problems encountered in health psychology. This course is restricted to students matriculated into the doctoral program in clinical psychology and is a required course.

PSY 03832: Behavioral Medicine 3 s.h.
Prerequisites: Matriculation in Ph.D. Program in Clinical Psychology
This course will expose students to the field of behavioral medicine and outline a behavior analytic approach to health promotion, disease prevention, and treatment of chronic disease and other behavior-related illnesses. The principles of behavior change will be reviewed and applied to a wide range of conditions including cardiovascular disease, obesity, drug and alcohol abuse, diabetes, and other psychophysiological disorders. This course is restricted to students matriculated into the doctoral program in clinical psychology.

PSY 03834: Neuropsychological Assessment 3 s.h.
Prerequisites: Grade of B- or better in PSY 03.703Assessment II: Cognitive
The course will emphasize the development of skills for recognizing and describing deficits in major aspects of cognitive functioning. The relationship between neuropsychological assessment techniques and procedures and brain-behavior relationships will be highlighted. Students will learn about the psychometric and qualitative aspects of the assessment process along with the selection and use of appropriate normative comparison standards. Finally, the role of the comprehensive neuropsychological assessment procedures in the evaluation of neurobehavioral disorders will be explored. This course is restricted to students matriculated into the doctoral program in clinical psychology and is required of students in Clinical Health Psychology.

PSY 03835: Pediatric Psychology 3 s.h.
Prerequisites: Matriculation in Ph.D. Program in Clinical Psychology
The purpose of this course is to examine the links between psychological and medical issues from infancy through adolescence. Psychosocial aspects of specific medical problems and developmental, emotional, and behavioral disorders are reviewed with an emphasis on evidence-based approaches to intervention and prevention. Students in this course are required to present a relevant case from their practice. This course is restricted to students matriculated into the doctoral program in clinical psychology and required for those in Clinical Health Psychology.

PSY 03838: Health Care Models & Service Delivery 3 s.h.
Prerequisite: Matriculation in Ph.D. Program in Clinical Psychology
Many individuals receiving care for behavior health conditions also have physical health conditions that require medical attention, and vice versa. As a result, health care systems are evolving rapodly to improve coordination among health care providers andn patients as well as to create models specific to rural and urban settings. In this course, students will learn how to effectively collaborate in a primary care setting, the different models ofo practice that can be used to integrate physical and behavioral health, and adaptations of these models for different settings. A final component of the course is discussion of how the changing landscape of health care policy impacts the practice of psychology.

PSY 03860: Internship 0 s.h.
Prerequisites: Permission of instructor
The internship is a 12-month full-time commitment (2,000 hours) that is designed to provide an intensive clinical experience expanding upon the required didactic coursework, clerkship, diagnostic practicum and therapy practicum experiences. In some approved circumstances students may complete the requirement in 24 months. Students will typically enroll in this noncredit course for each of the semesters that they are away. This course is restricted to students matriculated into the doctoral program in clinical psychology.

PSY 03900: Advanced Seminar in Health Psychology and Behavioral Medicine 3 s.h.
Prerequisite(s): Matriculation in Ph.D. Program in Clinical Psychology
Health Psychology and Behavioral Medicine represent disciplines that are dynamic and evolving. This content of this seminar will vary each time it is offered with different classes addressing different advanced topic areas in Health Psychology and Behavioral Medicine. The course is intended to be flexible so that different topics can be presented in response to emerging trends in the field.

PSY 03902: Advanced Seminar in Evidence Based Practice 3 s.h.
Prerequisite(s): Matriculation in Ph.D. Program in Clinical Psychology
This seminar is intended to be flexible in content and responsive to emerging trends in healthcare and treatment of individuals within a variety of different contexts. Cognitive-Behavioral treatments have been at the forefront of evidence-based treatments and therefore the content of this advanced seminar may focus on developments within this framework. However, the specific content of this seminar will be deliberately flexible and emerging evidence-base care models and treatments, regardless ofthe theoretical foundations from which they emerge, will also be included. The focus of

the class will be on helping students develop both a knowledge base and an ability to implement and critically evaluate emerging treatments.

PSY 05206: Social Psychology 3 s.h.
Prerequisite: PSY 01107 or PSY 01108
This course examines the psychological, social and cultural factors that shape the social behavior of the individual. It investigates such topics as affiliation, conformity, leadership, group processes; attitude formation and change; intergroup cooperation and conflict. The primary focus is on the individual in social context.

PSY 05501: Intervention Approaches In Psychology And Human Services 3 s.h.
This course provides an overview of major intervention strategies used in diverse settings to address the counseling needs of a variety of client populations. Factors affecting counselor efficacy are discussed. The course covers ethical principles and practice standards in human service intervention, as well as strategies for measuring the effectiveness of intervention approaches as applied to specific problems.

PSY 05502: Fundamentals Of Drug And Alcohol Abuse And Dependency 3 s.h.
This course provides an overview of fundamental issues concerning drug and alcohol use and addition. Topics covered include psychological theories of addiction, psychopharmacology, and legal and ethical issues in the prevention and treatment of addiction. The role of social context in drug and alcohol abuse prevention and treatment is discussed.

PSY 05512: Positive Psychology 3 s.h.
Prerequisite: Graduate level standing
What is a "good life?" What personal qualities and life experiences determine happiness? Are there things we can do that increase satisfaction with life in a meaningful and consistent way? How do people overcome adversity and build hope, strength and courage? In short, what really matters? Positive Psychology is an emerging area of psychology that attempts to scientifically examine these timelines and central questions. Positive Psychology focuses on such topics as happiness, hope, contentment, gratitude, creativity, optimism, values and resilience. This class will examine contemporary theory and research in Positive Psychology, with the goal of exploring how we might build a more satisfying life for ourselves and for others, and ultimately use this knowledge to improve organizations, schools, and other institutions for a healthier community.

PSY 05610: Social And Cultural Diversity 3 s.h.
Prerequisite(s): Matriculation in the MA in CMHC, OR the CAGS in CMHC, OR the MA in School Psychology
This course will review studies that provide an understanding of the issues and trends in a multicultural and diverse society and their influence on social thinking, social influence, and social relations. It will examine research dealing with the dynamics and impact of socially constructed categories. These categories include culture, ethnicity, nationality, age, gender, sexual orientation, mental and physical characteristics, education, family values, religious and spiritual values, socioeconomic status and unique characteristics of individuals, couples, families, ethnic groups, and communities. The implications of these issues for effective counseling is addressed.

PSY 05621: Social Issues in Health and Wellness 3 s.h.
Prerequisite: Matriculation into Ph.D. Program in Clinical Psychology
This course will focus on the ways in which prominent social psychological therories and perspectives have been tested and applied in the context of health, disease, and wellnedd. Topics including cognitive dissonance, social comparison, social perception, social influences, attitudes, communication and persuasion, relationships and social support, coping style, self-efficacy, self-motivation and self-regulations will be examined for their relations with health and wellness. Specific ways in which the broader socio-cultural environment has an impact on health behaviors, psysiology, and disese risk will also be explored. The integrationn of theroretical and empirical social psychological contributions to health will be emphasized.

PSY 05651: Interpersonal Theory And Psychotherapy 3 s.h.
Prerequisites: Matriculation in CAGS in Clinical Mental Health Counseling OR Min of B- in PSY 01650
This course is designed to be an overview of interpersonal psychotherapy and theory. The course will include didactic and experiential components, and will focus on developing the skills and knowledge necessary to use interpersonal techniques in a professional context. In addition to these general skills, the course will also focus on the application of these techniques to specific populations of interest within the psychological community.

PSY 05652: Advanced Seminar In Clinical Practice 3 s.h.
Prerequisites: Matriculation in CAGS in Clinical Mental Health Counseling OR Min of B- in PSY 01650
This advanced seminar in clinical practice is intended as a vehicle for bringing cutting edge information to current and future practitioners engaged in clinical services. The topic(s) covered in a specific section will vary depending upon focus chosen by the faculty member who is directing the class. However, the broad focus of each seminar will be on developing knowledge and skills that directly benefit the students' ability to function as a mental health professional.

PSY 05700: Social Psychology 3 s.h.
Prerequisite: Matriculation in Ph.D. in Clinical Psychology Program
Course includes a survey of the field of social psychology with emphasis upon: basic psychological factors affecting social behavior; attitudes; language and communication, society and culture; individual in relation to social groups and organizations, group effectiveness and role behaviors. Emphasis will be placed upon major theories and concepts of social psychology and relationships to other disciplines.

PSY 06533: Tests And Measurements 3 s.h.
The use, organization and interpretation of individual and groups standardized tests are studied. Other means of evaluation, such as observations, inventories and use of cumulative records, will be included. Opportunity will be provided for examining and evaluating these various evaluation instruments and techniques.

PSY 06625: Assessment I: Psychometrics, Evaluation, & Treatment Planning 3 s.h.
Prerequisite(s): Matriculation in the MA in CMHC, OR the CAG in CMHC
This course will introduce students to the practice of assessment in clinical and counseling contexts. The course will focus on covering three aspects of clinical practice as it relates to assessment. The first is the evaluation of the psychometric: properties of assessment tools and techniques. The second is using assessment data to develop a conceptual model of clients and their problems, and the third is on the use of assessment data for treatment planning. Students will also be introduced to ethical and professional issues related to assessment, and they will be expected to demonstrate their skills as part of their classroom experience

PSY 06626: Assessment II: Assessment Of Career/Vocational Interests, Treatments, & Programs 3 s.h.
Prerequisite: PSY 06625 with B- or above
This course will introduce students to three unique applications of assessment principals within clinical and counseling contexts. Specifically, students will learn about the use of the assessment process and instruments for the purpose of career and vocational counseling. In addition, students will learn how to design and implement procedures aimed at assessing the effectiveness of their services at an individual (treatments) and organizational (programs) level. Students will also be introduced to ethical and professional issues related to assessment in these contexts, and they will be expected to demonstrate their skills as part of their classroom experience.

PSY 06631: Psychological Testing Of The Preschool Child 3 s.h.
Practice in administration, analysis and evaluation of individual tests with infants and preschool children with emphasis upon such tests as the Gessell Infant Intelligent Scale, Cattell Infant Intelligence Scale, Gessell Developmental Tests, Minnesota Preschool Test and so forth. Tests will be administered under supervision with subsequent reports.

PSY 07714: Statistics for Clinical Psychology I: Univariate 3 s.h.
Prerequisites: Grade of B- or better in PSY 02. 706 Research Methods
PSY 07.714 Statistics for Clinical Psychology 1: Univariate 3S.H. Prerequisites: Grade of B- or better in PSY 02. 706 Research Methods This graduate level course provides an overview of basic statistical analyses frequently used in clinical psychological research. Omnibus and focused hypothesis testing in one factor and multifactor designs using the General Linear Model will be covered. Focus is on the appropriate applications and interpretations of these statistical analyses. This course is restricted to students matriculated into the doctoral program in clinical psychology.

PSY 07740: Statistics for Clinical Psychology II: Multivariate and Advanced Statistics 3 s.h.
Prerequisites: Grade of B- or better in PSY 07.714 Statistics for Clinical Psychology I: Univariate
This graduate level course provides an introduction to advanced multivariable statistical analyses frequently used in psychological research, such as canonical correlation analysis, multivariate analysis of variance, multivariate multiple regression, discriminant analysis, path analysis, factor analysis, logistic regression, multidimensional scaling, and cluster analysis. Issues of time-series analysis and meta-analysis are also explored. Focus is on the appropriate applications and interpretations ofthese statistical analyses in various areas of psychological research, including clinical, cognitive, physiological, and social psychology. This course is restricted to students matriculated into the doctoral program in clinical psychology.

PSY 07745: Statistics in Clinical Psychology III - Advanced Multivariate 3 s.h.
Prerequisites: PSY 07714 and PSY 07740 and matriculation into the PhD in Clinical Psychology program or other graduate programs, if prerequisites are met, or with Instructor approval.
Psychological research requires measuring many human characteristics (also known as "constructs") that are not observable, such as depression or marital satisfaction. Accurate and reliable measurement is essential to understanding statistical relationships between constructs. This course teaches students the basic principles of measurement theory and how best to assess the reliability and validity of constructs, as well as what statistical models to use to appropriately model measurement error. Topics covered include reliability, validity, classical test theory, item response theory, factor analysis, and structural equation modeling.

PSY 09209: Child and Adolescent Development 3 s.h.
The content of this course covers the physical, cognitive, perceptual, linguistic, emotional, social, moral and sexual development in humans, from the womb through adolescence. The influence of biological and sociocultural mechanisms underlying development within these domains are also considered.

PSY 09210: Adolescent Development 3 s.h.
This course studies current theory and practice related to biological, cognitive, psychoanalytic, psychosocial, sexual and moral development in adolescence. Students gain experience in developing beginning levels skills in selection and use of evaluative techniques and in the use of activities appropriate to the various levels of adolescent development. This course is intended for nonmajors and will not fulfill requirements of the Psychology major. Psychology majors must take Lifespan Development (PSY 01308) in order to fulfill the requirements of the major.

PSY 09218: Lifespan Development 3 s.h.
Prerequisite: PSY 01107 or PSY 01108
This course provides an overview of human development across the lifespan, including physical, cognitive, social, and personality development. All the major lifespan developmental theories and research will be presented, with heavy emphasis on students' critical thinking about research. This course will cover both normative and atypical development across the lifespan, including the major physical, mental health, and social problems occurring during the life span.

PSY 09305: Developmental Psychopathology 3 s.h.
Prerequisite(s): (PSY 01107 or PSY 01108) and PSY 09209 or PSY 09218
Using a developmental framework, the student will examine normal and abnormal behavior from infancy through adolescence. Students will learn about the pathways to normal and abnormal behavior, explore the factors that place children at risk for problems as well as the factors that protect children from adversity. Topics will include autism, depression, anxiety, aggression, attentional difficulties, developmental delay, and physical illness.

PSY 09511: Child Psychology 3 s.h.
This course is designed to help professional educators and others concerned with facilitating healthful child development to become more aware of the interrelationship of children's needs, potentialities and competencies. Attention is devoted to the physical, social, mental and emotional growth of the child from conception to puberty.

PSY 09512: Developmental Psychology Of Alcohol And Drug Abuse 3 s.h.
This course addresses the psychological issues of drug and alcohol abuse in the context of the developmental psychology of childhood and adolescence. Developmental considerations in prevention and intervention programming are emphasized. The insight of developmental psychology concerning normal developmental processes are integrated with family systems theory.

PSY 09560: Lifespan Development 3 s.h.
This course focuses on the developmental processes across the lifespan. Major theoretical perspectives are presented. Attention is given to physical, cognitive, social and emotional development at each significant developmental periods.

PSY 09595: Introduction To Counseling: Development Of Basic Skills 3 s.h.
Prerequisite(s): Matriculation in MA in CMHC program
This course is a graduate level introduction to the foundation skills necessary for mental health counselors. Thus, there is a minimum expectation of satisfactory understanding from certain core undergraduate areas (e.g.., Abnormal Psychology, Personality Theories) and basic experiences with people who have mental illness. This course will cover a wide variety of theoretical and applied topics including, the development of professional identity, observation skills, micro counseling skills and developing a multicultural competence. This course will also review mental status exams, the content areas of the initial intake interview, assessing for suicide and homicide risk, and conceptualizing clients. Students are expected to demonstrate these skills through the use of role plays and videotapes.

PSY 09700: Human Development 3 s.h.
Prerequisite: Matriculation into Ph.D. Program in Clinical Psychology
In this course, students will understand development as a fusion of biological, cognitive, affective, and social aspects of mind and behavior interacting in the context of culture. Students will learn about the theories and methodologies used to study human development across the lifespan from prenatal development through adulthood. The interplay between cognitive, affective, and social development will be emphasized, including such topics as perception, attention, memory, language, problem solving, decision making and interpersonal relationships. This course is restricted to students matriculated into the doctoral program in clinical psychology.

PSY 10315: Physiological Psychology 3 s.h.
Prerequisite: PSY 01107 or PSY 01108
An introductory course in physiological psychology designed to give the student an understanding of the neural processes mediating behavior. A study of advances in such areas as the neural coding of memory and learning; control of human behavior and emotions through physiological changes; the environment as it affects the nervous system; psychobiology of sex; psychosomatic illness; and instrumentation and techniques for investigating problems in physiological psychology.

PSY 10610: Psychopharmacology And Biological Bases Of Behavior 3 s.h.
Prerequisites: Matriculation in CAGS in Clinical Mental Health Counseling OR MA in Clinical Mental Health Counseling OR MA in Clinical Mental Health Counseling and B- of more in PSY 01623
This course will provide an understanding of basic neurological mechanisms and how they are affected by psychotropic medications. It includes a description of the functioning of neurotransmitters and their role in the etiology of some mental illnesses. The course will review the major classes of psychotropic medications and their use for specific psychological disorders. The integration of psychotropic medications into best practice treatment plans and case management is discussed.

PSY 10630: Biological Bases of Behavior
3
s.h.
Prerequisites: Matriculation into Ph.D.Program in Clinical Psychology
This course examines the structure and function of the nervous system, from the cellular to the behavioral level. Topics will include cell types, neuronal membrane electrical properties, synaptic properties, neurobiology of the senses, control of movement, development of the nervous system, and the effects of the nervous system on learning, memory and other psychological behaviors. Current research and animal models will also be discussed. Students will be expected to become proficient in both the basic biological mechanisms as they affect psychological functioning, and in current research in improving psychological functioning through neural and biological interventions. This course is restricted to students matriculated into the doctoral program in clinical psychology.

PSY 22507: Development And Learning 3 s.h.
This course is an introduction to the basic theories, vocabulary and principles of developmental psychology. Special attention is focused upon the role of environmental and educational factors in development, and the application of learning theory to modify behavior. Age-appropriate behaviors expected of children and adolescents are described.

PSY 22512: Educational Psychology 3 s.h.
The dynamics involved in the process of learning are emphasized. An objective of the course is a consideration of the ways psychology can be of value in facilitating the teaching-learning process. Such topics as formulating objectives, motivation and evaluation of learning are considered.

PSY 22586: Psychology Of Motivation And Learning 3 s.h.
An intensive study of the basic theories of learning and current research in motivation and learning is emphasized in this course. Stress is placed upon the significance of these theories and investigations for educational practices.

PSY 22600: Seminar I In Applied Research: School Psychology 3 s.h.
This course will concentrate on the latest developments in the field of educational psychology, emphasizing theoretical and research findings. An introduction to the field of school psychology will also be included. Students will be expected to complete a project to demonstrate scholarly and professional awareness in the field.

PSY 22601: Seminar II In Applied Research: School Psychology 3 s.h.
This course will concentrate on the latest developments in the field of educational psychology, emphasizing theoretical and research findings. An introduction to the field of school psychology will also be included. Students will be expected to complete a project to demonstrate scholarly and professional awareness in the field.

PSY 22602: Applied Research: School Psychology 1 s.h.

ADV 04330: Introduction To Advertising 3 s.h.
Prerequisite(s): COMP 01112 or HONR 01112 or ENGR 01201
The course provides an overview, including techniques and terminology that are useful in the professional world. Topics include history of advertising, marketing, ethics, law, consumer behavior, print and electronic media, and retail and corporate advertising. The course combines theory of advertising with practical applications.

ADV 04360: Integrated Marketing Communication 3 s.h.
Prerequisites: PR 06350 and ADV 04330
This course explores the expanded as well as the communication portion of the organization's business and marketing plans. Emphasis is placed on how to translate marketing strategies into a well-defined and seamless communication program directed at all of the organization's publics.

MAPR 01511: Writing Speeches 1 s.h.
Students will learn how to research the audience, how to locate information and how to write various kinds of speeches. Evaluating the effectiveness of a written speech will be covered.

MAPR 01522: Persuasion Techniques 1 s.h.

MAPR 01524: Fundraising And Development 2 s.h.
Students will learn how fundraising and development offices are organized, what research and case studies say about fundraising and development and how to plan and evaluate campaigns.

MAPR 01528: Communication with Special Publics 1 s.h.
This course will show students how to recognize the characteristics of special publics such as blacks and other minorities, women, senior citizens, youth influentials and the community power structure. Featured will be communication methods and strategies of communicating effectively with these special publics.

MAPR 01530: Internal Communications In Organizations 1 s.h.
Both lateral and vertical communications will be studied in various organizations. The importance of good internal communications on effective external communications will be highlighted. Ideas, plans and methods of initiating and maintaining an effective internal communications program will be emphasized.

MAPR 01531: Media Planning And Buying 1 s.h.
Students will learn how to devise a media plan that will most effectively carry their message to the target audiences. They will gain practice identifying audiences, developing a media budget, devising a media work plan and buying media.

MAPR 01533: Crisis Public Relations 1 s.h.
Students will learn how to anticipate crises and how to plan a communications program that works during a crisis. Working with internal and external audiences before, during and after a crisis will be covered.

MAPR 01534: Small Group Communications 1 s.h.
Addressed in this course will be the definition of small group communication; why to study small group communications; and communication factors such as group size, spatial arrangement in face-to-face groups, status, rank, and power; leadership; group climate; cooperation, competition, and conflict in group climate; and communication networks.

MAPR 01535: Interpersonal Communications 1 s.h.
Considered in this course will be communication between two people. Models of communications developed by authorities in the field will show how the communications process works. Featured will be the concepts of communications such as the frame-of-reference, empathy, authenticity, interpersonal trust, and feeling content. The course will help students understand some of the communication barriers encountered in day-to-day work.

MAPR 01536: Public Relations Law And Ethics 1 s.h.
The course will acquaint students with the substance and interpretation of the "Code of Professional Standards for the Practice of Public Relations," which is the official code of the Public Relations Society of America. During the course students will become familiar with the major laws governing broadcasting, publishing and speaking. A key ingredient of the course will be the opportunity for students to develop personal ethical stances about communications and to refine their skills at judging ethically unclear situations in communications.

MAPR 01537: Contemporary Public Relations Challenges 1 s.h.
This course will mix lecture with seminar discussions on key issues of the day affecting the practice of public relations. Classic problem-solving and decision-making designs will be part of the discussion about the contemporary events. Individual, on-the-job problems from class participants will be discussed and solved in case study fashion. (Using the computer for PR purposes will be stressed.)

MAPR 01538: Legislative Liaison For Public Relations Practitioners 1 s.h.
From this course students will learn how to identify from government officials and records information that affects organizations; to work effectively with government officials at all levels, local, state and federal; to promote legislation that would be helpful to an organization; and to obtain cooperation from government officials and groups.

MAPR 01541: Understanding And Writing Grants And Proposals 1 s.h.
Students will learn where to get grants, how proposals are evaluated and how to write and present proposals.

MAPR 01547: Graduate Strategic Writing 3 s.h.
This course consists of five writing modules with varying credits: MAPR01.506-Newswriting, MAPR01.507-Tightening Writing and Translating from Jargon to Comfortable Language, MAPR01.509-Writing Leads That Get Attention, MAPR01.510-Writing Reports, Letters and Memos, and MAPR01.513-Feature Writing. Instruction is given in the five modules in journalistic writing and editing. Students will learn how to prepare effective news releases, to edit the way professional writers do, to gain readers' attention by writing effective leads, to write reports, memos and letters that communicate effectively, and to prepare and place feature stories for newspapers, journals and magazines. Description of individual modules is given under each respective number.

MAPR 01548: Graduate Writing Basics 1 s.h.
In todays fast-action world, you are required to write accurate, hard-hitting communication at a moments notice. This course provides proctical guidelines for students who need to write with speed, precision and power.

MAPR 01550: Introduction to Graduate Strategic Communication Research 3 s.h.
A study of the research process as it relates to the task of writing a communication thesis. Emphasis will be placed on the four standard, accepted types of research. Students will examine the unique purposes, features, procedures and uses of each research type, using the information as the basis for creating a thesis proposal.

MAPR 01551: Graduate Strategic Communication Overview 3 s.h.
This is an overview of the relationships between an organization and its publics. Development of understanding among them is stressed. The course presents the theoretical foundation of public relations and outlines techniques of structured communications between an organization and its publics.

MAPR 01553: Graduate Case Studies In Public Relations 1 s.h.
This course reviews and predicts how organizations solve their PR challenges. Through case studies, students evaluate issues, audiences and strategic elements of each situation. Students work through problems in seminar situations and write position papers.

MAPR 01554: Planning Special Events 1 s.h.
This course will survey the problems and solutions surrounding the staging of special events and workshops in the practice of public relations. events like ground-breaking news conferences, dignitary visits, seminars, anniversary celebrations and many more pose planning and implementation problems for the practitioner. Students will anticipate and solve these problems and have the option to make plans of their own for upcoming events. Included will be budgeting, involving the audience in planning, choosing sites, working with speakers and evaluating the event workshop.

MAPR 01555: Persuasive And Feature Writing 1 s.h.
Students will learn in this module additional technical skills in modifying opinion through writing. Students will receive a personal checklist of their persuasive writing needs during the course. In addition, students will learn how to prepare and place feature stories for newspapers, journals, and magazines.

MAPR 01556: Organizational Public Relations Management & Counseling 3 s.h.
This three credit course will acquaint students with many aspects of the public relations profession (or review for some). Students will learn about the composition of PR departments, the steps necessary to manage a public relations department and accepted methods to establish budgets in a public relations shop. Students will be expected to analyze the economic realities surrounding the practice of public relations in a variety of settings. For the first time, there will be a concentration on public relations counseling, media training and rehearsal, and media relations.

MAPR 01557: Using Electronic Media In Public Relations 2 s.h.
This course will acquaint students with the techniques of producing video for electronic media and its proper use in a public relations program within a given budget. They will become familiar with the different requirements for electronic media production. Students will also study the steps involved in applying this method: choosing appropriate film subjects and film principles, properly conducting the planning of a story and performing the right production practices.

MAPR 01558: Integrated Marketing Communication 1 s.h.
The relationship of marketing, public relations and advertising will be explored. Marketing, PR and advertising techniques-including cost-effective ways of reaching key audiences-will be discussed, as will positioning, testing and evaluating.

MAPR 01559: Strategic Public Affairs 3 s.h.
The course examines theory and practice of strategic political communications, including depth study of persuasion campaigns, use of propaganda in public affairs, and the role of communicators in engaging the public in the critical public policy issues.

MAPR 01560: Public Affairs Overview 3 s.h.
This course is an overview of the ethical and legal means used by public affairs representatives in influencing the political, legislative, and regular process of government. Emphasis is placed on demonstrating strong writing and research skills, as well as developing effective communication plans.

MAPR 01561: Graduate Strategic Writing II 3 s.h.
A continuation of the graduate PR writing course, this course examines the more demanding writing projects encountered by the PR practitioner. The course polishes writing and editing skills to better prepare students for a professional position. Students will learn creative techniques required to successfully prepare different materials. They will write features for newsletters and magazines and prepare video/film scripts. They will also write and edit persuasive copy for marketing communication material for advertorials, position papers, op-ed pieces and speeches.

MAPR 01562: Integrated Marketing Communication Online Overview 3 s.h.
This course will familiarize students with the concepts and processes of Integrated Marketing Communication. By examining case studies, students will learn how the different marketing communication elements work together to enhance the marketing function and to achieve maximum impact. Finally, students will obtain a fundamental understanding of how to include IMC as a crucial element in the planning process.

MAPR 01563: Research, Messaging and Audience Online Analysis 3 s.h.
Students will study various research methodologies in this course. They will learn to develop measurable research objectives, select appropriate methodologies and analyze data. The course also introduces students to a range of qualitative and quantitative research questions and to the tools for answering them. These include secondary searches; individual and group interviews; media audience measurement; market structure; segmentation and usage studies; strategy, concept and positioning research; syndicated and custom message pre/post tests and tracking studies; and test markets. Students will also develop questionnaires and examine research methods such as personal and telephone interviews, focus panels, mail surveys, probability and quota sampling, and experimental design.

MAPR 01565: Integrated Marketing Communication and New Media 3 s.h.

MAPR 01566: Public Affairs Advertising 1 s.h.
This 5-week module will teach students the basic principles of advertising in the public area. Topics will include using advertising to set the agenda of a public policy debate; how to apply the lessons of product advertising; conditions that enhance the effectiveness of advertising; issue advertising as protected speech; the importance of a good working relationship with advertising agencies; advertising in a crisis; the role of research in advertising; and evaluating the effectiveness of public affairs advertising. The module will also convey real-world examples from practitioners to present to the student a broad understanding of public affairs advertising.

MAPR 01567: Public Affairs And Labor Communication 1 s.h.
This 5-week module concentrates on the role public affairs plays in an organization's relationships with its employees and the unions which represent them. Students will explore the relationship between management, unions and labor, and the role of public affairs in those relationships. Topics include: eommunity organizing; employee communications; building and maintaining political support; federal and state regulations regarding employee relations; media relations; the "Managerial Creed;" and the legal aspects of labor/employee communication. Students will gain thorough knowledge by learning about current cases.

MAPR 01568: Graduate Strategic Visual Communication 3 s.h.
The ability to conceive, produce and deploy rich visual imagery is now a core requirement for advertising and PR practitioners. To help students prepare for this rapidly evolving field, this class explores how and why visual media have overtaken text-based content. Through practical, hands-on individual experiences and class projects, it provides a framework for understanding the different types of visual media and their participants, choosing the right tools, and devising the strategies to succeed in this new digital era.

MAPR 01569: Graduate Strategic Case Studies & Public Relations Planning 3 s.h.
This course reviews and predicts how organizations solve their PR challenges. Through case studies, students evaluate issues, audiences and strategic elements of each situation. Students work through problems in seminar situations and write position papers. Students will learn the classic ways to construct a public relations plan, including writing goals and objectives, establishing campaign themes, and strategies, developing PERT and GANTT charts, specifying plan details and learning how to monitor and evaluate the plan. Students will also learn how to write a proposal, how to identify the real communications problem, and how to counsel management about policy related to the success of the plan.

MAPR 01570: Graduate Media Metrics and Analytics 3 s.h.
This course provides a thorough grounding in how media consumption is measured (metrics) and utilized (analytics) by media organizations and independent professionals. The course spans traditional circulation of print publications, broadcast, cable, and radio ratings, website traffic measures, social media statistics and advertising data. Media Metrics and Analytics examines the types of measures that, for example, are now commonly displayed on monitors in newsrooms as a way to gauge the success of a story, or are used by entrepreneurs to evaluate the overall success of various media.

MAPR 01575: Independent Study-Public Relations .5 to 6 s.h.

MAPR 01610: Internship In Public Relations 3 to 6 s.h.
This course requires on-the-job apprenticeship in a public relations program that involves a wide variety of tasks. The internship is overseen by a public relations professional on the job and by a PR professor.

MAPR 01620: Strategic Communication Seminar 3 to 6 s.h.
Prerequisites: MAPR 01547 (allows concurrent enrollment), MAPR 01550 (allows concurrent enrollment), and MAPR 01551 (allows concurrent enrollment).
Each student will be required to develop a major communication project on any phase of educational or corporate communications. The project will display appropriate research procedures and skill in communications. Some seminar sessions will be used to provide additional communication background for students. Students are required to complete both the fall and spring seminars for the program. The fall semester is a prerequisite for the spring semester. The student must have completed or be enrolled in Public Relations Overview (MAPR 01551), Techniques of Communication (MAPR 01547), and Intro to Communications Research (MAPR 01550).

MAPR 06505: Special Topics In Public Relations 1 s.h.
Special topics provide an opportunity for graduate students to explore an emerging issue in the field of public relations in a timely fashion. The course presents an opportunity to study the topic under the guidance of an expert in the particular field or issue.

MAPR 06515: Online Public Relations 3 s.h.
Public relations has moved to the Internet, and in the process online communication skills have become essential to online and offline public relations practice. Online public relations explores the practical tools necessary for using the internet in public relations and provides a broad overview for creating an online newsroom.

MAPR 98503: School Public Relations 3 s.h.
This is an overview of the relationships of the school and its various publics. The public character of the school and the need for public understanding of the school are considered. Development of understanding between the school and the community is stressed.

MAPR 99523: Polls & Surveys 1 s.h.

PR 05350: Strategic Communication Overview 3 s.h.
Strategic Communication Overview will provide a comprehensive look at the integration of public relations, advertising and marketing communication. The class develops the role of public relations and advertising in the strategic communication environment. It addresses research, public opinion, the media, as well as law and ethics.

PR 06301: Basic Public Relations Writing 3 s.h.
Basic Public Relations Writing introduces students to the tasks of writing and editing required in a public relations position. Students will learn to write for both print and electronic media, develop their skills in grammar, syntax and usage and learn to copy edit their own work and the work of others.

PR 06310: Introduction To Public Relations/Advertising Research 3 s.h.
Prerequisites: 60 credits required
The course studies both qualitative and quantitative research methods necessary for success in the fields of public relations and advertising. Emphasis is placed on evaluation of secondary searches, individual and group interviews, media audience measurements, market structure, segmentation and usage studies, and tracking studies.

PR 06350: Introduction To Public Relations 3 s.h.
Prerequisite(s): COMP 01112
This course explores the history and role of public relations in society. Students explore mass media, persuasion, publicity, radio and television. Students examine special events, crisis management, communication techniques, research and evaluation, communication law and ethics. Basically a theory course, this introduction also applies ideas practically to real clients and organizations.

PR 99362: Public Opinion 3 s.h.
Prerequisites: PR 06310
This course includes the nature and role of public opinion, the dynamics of public opinion processes and the numerous factors which shape or influence opinion. Students examine the mass media, evaluating their roles as molders and reflectors of public opinion. Major topics that influence public opinion are discussed, including gratifications, agenda setting, knowledge gaps, censorships and propaganda.

RTF 03270: Film History to 1940 3 s.h.
Prerequisite(s): COMP 01111 and RTF 03275
Students trace the development of motion pictures as an art form from the 1890s to 1941. Representative selections from the various genres are screened, then discussed in terms of art, technique, content and historical perspective, as well as directorial style. Part I is not a prerequisite for Part II; these courses may be taken in any order; students may opt for one or both courses.

RTF 03271: Film History Since 1940 3 s.h.
Prerequisite: COMP 01111 and COMP 01112
This course is a continuation of RTF 03.270 with emphasis on contemporary genres and implications. Students trace the modern cinema from 1941 to the present. Students may take Part II prior to Part I; although the content is chronological, Part I is not a prerequisite for Part II.

RTF 03275: Applied Media Aesthetics: Sight, Sound And Story 3 s.h.
This course offers students an introduction to the aesthetic concepts as applied directly to radio, television, and film media. Using examples from these media, students will study, discuss, and analyze design and composition elements as they apply to the production process. A basic vocabulary of aesthetic terminology will be assembled and students will be responsible for understanding and applying those terms through various written and visual assignments.

RTF 03295: Introduction To New Media 3 s.h.
Prerequisite(s): COMP 01111 AND COMP 01112
Introduction to New Media surveys emerging digital communication and entertainment media and teaches new media from the perspective of the producer. Students will discuss the evolution, social and historical implications, and production of media forms with an emphasis on social networking, user generated and other web media.

RTF 03393: Screenwriting 1: Writing the Short - WI 3 s.h.
Prerequisites: COMP 01111 and COMP 01112
The course covers the basic technical requirements for writing movie scripts and the problems of adapting material to screen and script analysis. By viewing contemporary movies and studying plotting, point-of-view, character creation and dialogue, students learn how a film script is put together and write an original script.

RTF 03394: New Media Production 3 s.h.
Prerequisite: RTF 03295
This is the second in a sequence of three courses in the Interactive Media specialization. Students will apply content production skills from radio, television, and film to the production of hybrid media. Students work in teams to plan, design, produce, and test multimedia products. Students are expected to demonstrate a high level of professionalism in completing all work on schedule to professional standards and in their interactions.

RTF 10510: Writing for Television 3 s.h.
Writing for Television provides students with an advanced understanding of the major methodologies and practices central to television writing. The course is designed to provide students with the skills necessary to conduct graduate-level writing in the field of Television Studies, journalism and scriptwriting. The course offers in-depth explorations of key approaches foundational to academic and critical writing, journalism and scriptwriting. Students will develop conceptual and practical frameworks for designing and conducting graduate-level Television Studies assignments.

RTF 10511: Research Methods in Television Studies 3 s.h.
Research Methods in Television Studies provides students with an advanced understanding of the major theories and research methodologies central to the field of Television Studies. The course is designed to provide students with the skills necessary to conduct graduate-level research in the field of Television Studies. The course offers an in-depth exploration of key scholarly approaches foundational to television history, criticism, and theory, encompassing the range of ways that televisual media has been understood within the discipline. Students will develop conceptual and practical frameworks for designing and conducting graduate-level Television Studies research projects.

RTF 10512: Television Genre and History 3 s.h.
Television Genre and History provides students with an advanced understanding of the major theories and research methodologies central to an historical study of Genre. The course is designed to provide students with the skills necessary to conduct graduate-level research in the field of Television Studies, history and genre. The course offers an in-depth exploration of key scholarly approaches foundational to a study of the development of genre theory and its application to Television Studies. Students will develop conceptual and practical frameworks for designing and conducting graduate-level Television Studies research projects.

RTF 10513: The Global Television Industry 3 s.h.
The Global Television Industry provides students with a comprehensive understanding of the historical foundations of the global television industry and the ability to identify major shifts in the current international landscape of television markets. The course is designed to provide students with the skills necessary to conduct graduate-level research in the field of Global Television Studies. The course offers an in-depth exploration of key scholarly approaches foundational to the study of the global television industry, encompassing the range of ways that international television markets have adopted international products and adapted them to their home market. Students will develop conceptual and practical frameworks for designing and conducting graduate-level Television Studies projects.

RTF 10514: Identity on Television 3 s.h.
Identity on Television provides students with an advanced understanding of the relationship between identity formation and its representation on television, whether personal, social/cultural or national. The course introduces students to various theoretical approaches to identity and is designed to provide students with the skills necessary to apply these approaches to specific examples from the international television market. The course offers in depth exploration of key theoretical approaches to identity formation and how it is subsequently represented in television products. Students will develop conceptual and practical frameworks for designing and conducting graduate-level Television Studies written assignments.

RTF 10516: Television Auteurs 3 s.h.
Television Auteurs provides students with an advanced understanding of the relationship between the study of the auteur, television writing and the role of the showrunner in the contemporary television period. The course introduces students to various theoretical approaches to the television auteur and is designed to provide students with the skills necessary to apply these approaches to specific examples from the contemporary international television landscape. The course offers in depth exploration of key debates and approaches to the auteur theory and how the concept of the authorship has subsequently been developed in the field of Television Studies. Students will develop conceptual and practical frameworks for designing and conducting graduate-level Television Studies written assignments.

RTF 10517: THE WRITER'S ROOM 3 s.h.
THE WRITER'S ROOM provides students with an advanced understanding of screenwriting industry standards and practices for streamers, networks, and web-based productions. The course further offers an in-depth exploration of how the "rooms" of seminal and award-winning series are constructed and run. Using a workshop model, assignments and exercises of increasing importance will lead the class through the development of an original series. Students will execute individual and group research, and splinter into smaller units to write full episodes of this original show. The semester culminates with table reads of the season's first three episodes.

RTF 10518: The Evolution of Quality Television 3 s.h.
The purpose of this course is to trace the development of some of television's most ambitious and distinctive series with an intense focus on the notion of quality. Students will be instructed on the history of quality TV, trace the development and evolution of distinct forms of quality programming, learn about different cultural notions of quality and understand how this designation has developed and changed over time. The course offers in-depth explorations of key approaches. Students will learn to contextualize and situate their research in relation to broader writing styles as well as wider disciplinary traditions and debates in order to develop original projects that address varying conceptual and practical frameworks suitable for

graduate-level Television Studies assignments.

RTF 10519: Women and Television 3 s.h.
This course provides students with an advanced understanding of key issues, theories, and analytical approaches related to the study of women/gender and Television in order to provide students with the skills necessary to conduct advanced, graduate-level research in the field of Feminist Television Studies. The course offers an in-depth investigation into key theoretical approaches to women's positioning within society and how this relates to their place within the television industry. Students will analyze the construction of women and gender in television in relation to: institutions of production and how television produces, reproduces, and/or challenges gendered power relations in the media industries, as well as issues of authorship and representation and how gendered working practices impact on women's representation onscreen. Starting from an historical overview of the evolution of women's roles within society, the course will then turn to the television industry specifically in order to unpack how gendered expectations impact on women's roles within television. The course will primarily focus on the US television industry but will also include overviews of European practices in order to uncover how societal expectations impact on representational practices.

RTF 10520: Graduate Audio Production 3 s.h.
Graduate Audio Production teaches the basic concepts of sound as it relates to the medium of radio, television, and film. Through coordinated reading assignments and in-class listening, students will become familiar with various styles of documentary audio production. Students will also study the historical evolution of film sound and music through lectures, viewing, and in-class discussion. Students will be expected to integrate this information into the production of professional audio documentaries and sound design for film.

RTF 10521: Graduate Documentary Production 3 s.h.
Graduate Documentary Production is a graduate course where students lacking will gain knowledge and skills to produce documentary projects. Students will explore the culture of the media professional through a series of group assignments that stress productive collaboration, objective criticism and analysis, professional ethics, and time management. Students will develop competencies in the processes and equipment of television field production, experiencing all phases of pre-production, production, and post-production as they research, write, shoot and edit creative projects.

RTF 10522: Graduate Film Production 3 s.h.
Graduate Film Production is a graduate course where students are introduced to the technological, organizational and aesthetic production competencies for shooting narrative films using color, lights and sound. Readings will emphasize cinematic visual storytelling conventions. Homework assignments will emphasize preproduction, previsualization and production coordination of short narrative films. Students will produce a series of production assignments culminating in the production of a short narrative film.

RTF 10523: Graduate Screenwriting 3 s.h.
Graduate Screenwriting is an intensive writing workshop where students learn the basics of dramatic writing for the screen. The first half of the course is built around screenings, lectures, discussions and exercises where students explore the fundamentals of daily writing, dramatic structure, visual writing, characterization, dialog and proper screenplay formatting. Film analysis will focus on classic and contemporary shorts and feature films. The second half of the semester focuses on the development, and re-writing of a narrative short film based on an incident from a longer feature screenplay outline.

RTF 10524: Master's Project 3 s.h.
Pre-requisites: RTF 10510, RTF 10511, and RTF 10512
The Master's Project will culminate in a 10,000word project offering students the opportunity to demonstrate specialized subject knowledge as well as excellent research and writing skills learned over the course of the Master's program. This final piece of work will utilize students' particular expertise in their chosen pathway and will take the form of an academic thesis, a longer form of piece of journalistic writing or a short script suitable for television production. Supervisors most suited to students' chosen subject area, topic and skillset will be assigned by Faculty at the outset of the course. Students will be offered weekly workshop sessions and/or individual meetings with their allocated supervisors to guide them through this, their final written assignment.

RTF 10525: Rhetoric of Reality TV 3 s.h.
This course examines rhetorical dimensions of the reality television genre. Students will analyze the various subgenres constituting Reality TV, with particular attention given to how such shows critique and/or validate certain identity positions in Western culture, including gender, gender identity, race, class, sexual orientation, and regional identity. Students will explore concepts of authenticity, truth, and suspension of disbelief as they relate to a television format based in documenting the "real."

RTF 10526: Script To Screen 3 s.h.
Script to Screen provides students with an advanced understanding of the major methodologies and practices central to the work of a directing and producing narrative television. The course is designed to provide students with the skills to prepare to produce or direct narrative scripted material for television. The course offers in-depth explorations of key approaches to directing both multi-camera live productions and single camera film style productions. Students will develop conceptual and practical frameworks for designing and producing shooting plans for narrative scripted content. Students will develop an appreciation the key role of the director in preparing a television script for the production process.

RTF 10527: Episodic Screenwriting I: Creating the Series 3 s.h.
This graduate-level writing workshop course explores the form of episodic screenwriting, specifically serialized narrative programs. Students analyze a variety of episodic content; design a complete "show bible," a document that maps a series and provides a clear sense of its characters, tone, structure and narrative trajectory; create a polished visual pitch presentation; and write the first act of a pilot script.

RTF 10530: Master's Project II 3 s.h.
Corequisite(s): RTF 10524
The Master's Project will culminate in a 10,000word project offering students the opportunity to demonstrate specialized subject knowledge as well as excellent research and writing skills learned over the course of the Master's program. This final piece of work will utilize students' particular expertise in their chosen pathway and will take the form of an academic dissertation, a longer piece of non-fictional critical writing or a short script suitable for television production. Supervisors most suited to students' chosen subject area, topic and skillset will be assigned by Faculty at the outset of the course. Students will be offered weekly workshop sessions and/or individual meetings with their allocated supervisors to guide them through this, their final written assignment.

EDTC 33510: Emerging Technology Tools and the Curriculum 3 s.h.
The philosophical, psychological, sociological and educational implications of the computer and its impact on the public school curriculum are explored. Current relationships between theory and practice, along with future technologies, are examined.

EDTC 33531: Coding and Logical Thinking to Support Learning 3 s.h.
The course prepares educators to focus on exploring rationales, resources, and strategies of incorporating coding, programming, and logical thinking in P-12 classrooms. Educators will not only become familiar with the basics of coding and logical thinking, but they will also research case studies and evaluate best practices, available resources, and curriculum. The content of this graduate-level course will focus on the development of the educators' understanding of ways to effectively use best-practice teaching strategies with respect to coding, programming, and logical thinking so as to support P-12 learning.

EDTC 33540: Developing Online Resources for P-12 Students 3 s.h.
The course prepares educators to develop online lessons and resources for P-12 students in classroom and online learning environments. Participants will learn the theory and practice of P-12 online teaching and learning and explore effective strategies to develop useful web-based lessons and resources. Emphasis is placed on understanding the trend of P-12 online education, selecting effective tools for online instruction, engaging students through collaborative activities, and developing and evaluating online resources. Participants will become familiar with technological tools for designing online resources and develop knowledge of online resources for teaching and student use.

EDTC 33550: Learning through Gamification 3 s.h.
The course prepares educators to focus on the development of the educators' understanding of ways to effectively use gamification and digital game-based learning in the P-12 classroom. In addition, educators will apply gamification principles and best practice strategies for digital games in their teaching as exemplified by a unit they create as well as an educational digital game that they will design and plan. Educators will also advocate for the integration of gamification into other subjects within their educational organization. This course will benefit teachers and educators who are seeking to implement gamification and digital gaming to support P-12 student learning in their own classrooms and educational institutions.

EDTC 33561: Leading for Effective Educational Technology 3 s.h.
The content of this graduate-level course will focus on developing the educators' understanding of educational technology leadership in P-12 schools. Building upon past research on strategies, theories, and frameworks that best support learning through educational technology leadership, the educators will create work products that can be used to advocate for effective educational technology in their own P-12 educational organization. Major topics of this course include the following: navigating change, effective infusion of educational technology, and best practices of educational technology leadership.

EDTC 33570: Researching and Analyzing Educational Technology 3 s.h.
The course is designed to induct teachers into educational technology research. The primary goal of this course is to introduce instructional system design (ISD) theories and frameworks and the types of educational technology research in P-12 and higher education settings. Participants will review the instructional system design processes and explore both qualitative and quantitative research studies of educational technology in P-12 and higher education settings. Participants will develop their sills in analyzing and summarizing literature in educational technology.

EDTC 33580: Introduction To Educational Technology 3 s.h.
This course is intended for educators at all levels who place a high value on successful teaching and learning. The purpose of the course is to help educators incorporate media and technologies for learning into their repertoire--to use them as learning tools. The course will draw examples from elementary, secondary, and postsecondary education as well as corporate training and development. This course will provide the initial opportunities necessary to begin technology infusion in the school curriculum.

EDTC 33584: Digital Citizenship in 21st Century Schools 3 s.h.
The primary objective of this course is to provide a comprehensive introduction to desktop publishing using desktop publishing programs that can be used in the educational setting. This course provides a hands-on approach to desktop publishing using both high-end and low-end publishing programs. The experiences in this course will help students to become more involved with the visual impact of their ideas on the readers. Students will learn to integrate ideas with words, typestyle, graphics and other features involved in the production of publications with a high level of visual impact.

EDTC 33585: Internet In The Classroom 3 s.h.
Prerequisites: EDTC 33.580
This course provides and introduction to the Internet emphasizing its value in teaching and learning. In this course students will discover how to use some basic Internet navigation programs to locate and gather information from the Internet. Lessons will include finding and subscribing to listserv lists in education, using ERIC online, accessing and employing web search engines., locating and downloading files, handling files with e-mail, discovering and capturing multimedia elements on the web, developing a personal web page, and analyzing the implication of the Internet for lifelong learning in education.

EDTC 33600: Seminar in Educational Technology 3 s.h.
The purpose of this course is to introduce educators to current research trends and topics in educational technology through literature review, discussions, and case studies. The course focuses on building a knowledge base in trendy topics, concepts, and technologies that drive educational change and innovation in P-12 education. Participants will explore important developments of educational technology, trends of technology adoption, as well as challenges and potential solutions of implementing advanced technologies in teaching and learning. In addition, participants will become familiar with the major sources of educational technology research and improve their analytical and critical thinking skills.

EDUC 01282: Teaching In Learning Communities II-Art 3 s.h.
Prerequisite: C- or better in EDUC 01270
Teaching in Learning Communities II Art furthers the understanding of successful and caring learning communities begun in Learning Communities I. A field component is required.

EDUC 01284: Teaching In Learning Communities II-Music 3 s.h.
Prerequisite: C- or better in EDUC 01270
Teaching in learning Communities II Music, is specifically designed to continue the development of an understanding of successful and caring learning communities begun in the Teaching in Learning Communities I course and apply it specifically to the music classroom as a "learning community." This course will be music education specific to develop a broad and deep knowledge of music education processes throughout grades K-12 in music settings. A field component is part of this course.

ENED 13501: Applied Teaching and Learning in the Outdoors 3 s.h.
This course critically explores theories of learning applied in outdoor environmental education (EE) settings. The course will emphasize effective strategies for teaching and communicating about both ecosystems and environmental issues to a diversity of learners. Students will develop and teach place-based lessons appropriate for schools or informal environmental education settings. Other course topics will include how various types of education, including experiential, inquiry-based, and science education contribute to teaching and learning in the outdoors. During visits to a variety of outdoor teaching settings (both on campus and at environmental education centers, parks, etc), students will gain first-hand experience observing and evaluating EE lessons. The main assignments for this course will include participation in advanced critical analysis of the EE literature, including journal articles; conducting an EE teaching evaluation; developing site-specific curriculum; and designing a long-term environmentally-based action research or service project focused on teaching and learning in the outdoors, which will be implemented at the student's school or other environmental education setting. Throughout the course, students who are teachers or EE professionals will have the opportunity to apply their coursework directly in their field of practice. The course will include one or two Saturday field trips to various outdoor EE settings.

ENED 13502: Advanced Approaches to Environmental Education 3 s.h.
In this course, we will explore the multiple dimensions of and approaches to environmental education (EE) through analysis of current research in the field. Course topics include developing an in-depth understanding of the EE field and its challenges, examining various theoretical perspectives from the literature that have contributed to the EE field, how these perspectives are applied in various EE settings, and how individual and societal decision-making relate to environmental issues. Students will visit several different settings where EE occurs (for example, pre-K to 12 classrooms, outdoor EE sites on Rowan's campus, including the Fossil Park, environmental education centers, parks, etc), and conduct an EE program evaluation during one of the visits. Finally, through journal article analysis and discussion, we will critically examine significant issues in the field of EE and discuss practical solutions to these obstacles. The course will provide opportunities for students, including pre-K to 12 teachers and environmental education professionals, to explore curriculum that can be implemented in their own teaching settings. Students will also conduct an environmentally-focused action research or service project focused on investigating and/or improving a targeted aspect of environmental education at their school or other environmental education site. The course will include one or two Saturday field trips to various EE settings.

HPE 00552: CURR & ASSES IN ADAPT PHYS ACT 3 s.h.
This course is designed to provide adapted physical activity specialists with the knowledge and basic skills required to assess children with disabilities for their physical education needs, make a referral, work with a team to set goals, plan individualized instruction, and advocate for children with disabilities in special education settings.

HPE 00553: Community-Based Adapted Physical Activity 3 s.h.
Prerequisite: HPE 00552 or Departmental Approval
This course is designed to provide adapted physical activity specialists with the knowledge and basic skills required to provide appropriate and safe community-based adapted physical activity programming.

HPE 00554: Pathology of Disability for the Adapted Physical Activity Specialist 3 s.h.
Prerequisite: HPE 00552 or Departmental Approval
This course is designed to provide adapted physical activity specialists with the knowledge and basic skills required to: (1) understand and interpret basic medical terminology; (2) list and describe characteristics of all 14 categories of disabilities listed by IDEA and the NJ DOE; (3) list modifications for physical activity participation for individuals with disabilities listed by IDEA/ NJ DOE plus several adult onset disabilities; and (4) discuss general causations, diagnostic procedures, and treatments for a variety of disabilities especially in ages 3-21.

SECD 03330: Clinical Experience in Teaching and Learning A Art 1 s.h.
Prerequisite: SMED 01282; Corequisite: SECD 31350
This course introduces students to an authentic elementary art classroom in a regional school district. Field visits will involve students in examining school and district policies, the art curriculum, field reports regarding observations of instruction and assessment, classroom management, and teacher-student interactions. Students will collaborate on developing one lesson plan that will be co-taught during this placement. This course consists of a class sessions and field visits.

SECD 03332: Clinical Experience in Teaching & Learning B Art 1 s.h.
Prerequisite: SECD 03330; Corequisite: SMED 31360
This course introduces teacher candidates to a public high school art classroom setting. The course will consist of an opening general session and field visits where teacher candidates will be introduced to school/district policies and the art curriculum. They will observe art instruction and assessment, classroom management, and teacher-student interactions. Teacher candidates will collaborate on designing one lesson plan that they will co-teach during this placement.

SMED 31350: Elementary Art Methods: Teaching and Learning Art A 3 s.h.
Prerequisites: C- or better in SMED 01282Corequisite: SECD 03330 and ART 09201
This course prepares pre-service teachers for instructing preschool, elementary and middle school students in the visual arts. Through laboratory and clinical field experiences learners will apply theories of artistic learning to authentic arts classroom situations while under faculty supervision. Assignments involve the learner in examining art curriculums, a variety of assessment strategies used by art teachers in the classroom, and approaches for critiquing student works and aesthetic enrichment. The learner will be required to prepare art lessons and units of study that demonstrate: a working knowledge of artistic concepts and skills, an understanding of the artistic development of children, and considerations for adaptive learning in the arts for special populations.

SMED 31360: Secondary Art Methods: Teaching and Learning Art B 3 s.h.
Prerequisites: SMED 31350 and SECD 03330
This course prepares pre-service teachers for instructing high school students in the visual arts. Through laboratory and clinical field experiences learners will apply theories of artistic learning to authentic arts classroom situations while under faculty supervision. Assignments involve the learner in examining high school art curriculums, a variety of assessment strategies used by art teachers in the classroom, and approaches for critiquing student works and aesthetic enrichment. The learner will be required to prepare art lessons and units of study that demonstrate: a working knowledge of artistic concepts

and skills, an understanding of the artistic development of the adolescent, and considerations for adaptive learning in the arts for special populations.

SMED 31450: Clinical Practice II: Elementary and Secondary Art 10 s.h.
Prerequisite: SMED 31351 Corequisite(s): SMED 31451 and SECD 03350
This senior level course provides the teacher education candidate with opportunities to demonstrate the professional knowledge, pedagogic skills and dispositions developed in preservice professional course work. The student teaching experience is a supervised, full-time activity conducted in public elementary, middle, and secondary art classrooms. The experience requires demonstrated mastery of artistic content, lesson planning, instructional techniques in the arts, student assessment and classroom management. Admission to this course requires completion of professional education courses and near completion of academic major courses. A minimum grade point average of 3.0 in major and professional education courses is required.

SMED 31451: Clinical Practice II: Seminar for Art Education 1 s.h.
Prerequisite: SMED 31351 Corequisite(s): SMED 31450 and SECD 03350
This capstone seminar for art teacher candidates provides an opportunity to establish structural knowledge that will enable the integration of applied art classroom experiences during the subsequent weeks of student teaching and, creates a forum for students to process new experiences in the elementary, middle and secondary schools with art professionals who share an understanding of the context in the art classroom. Interviewing skills and a professional portfolio will be developed during this course.

SMED 32411: Clinical Practice In Music 10 s.h.
Corequisites: SECD 03350 and SMED 32412
This senior level course provides the teacher education candidate with opportunities to demonstrate the professional knowledge, pedagogic skills and problem-solving ability developed in preservice, professional course work. The student teaching experience is a supervised, full-time activity conducted off-campus in a public secondary school classroom. The experience requires demonstrated proficiency in lesson planning and evaluation, instructional techniques, student assessment and classroom management. Admission to student teaching requires near completion of academic major, minimum grade point average of 3.0 in major and recommendations by major field academic department and teacher education faculty.

SMED 32412: Clinical Practice Seminar In Music 1 s.h.
Corequisites: SECD 03350
This capstone seminar for music student teachers provides an opportunity to establish structural knowledge apriori that will enable the integration of applied music classroom experiences during the subsequent weeks of student teaching, and creates a forum for students to process their new experiences in the schools with music professionals who share the context for the music classroom.

SMED 33510: Computers And The Curriculum 3 s.h.
The philosophical, psychological, sociological and educational implications of the computer and its impact on the public school curriculum are explored. Current relationships between theory and practice, along with future technologies, are examined.

SMED 33600: Problems In Mathematics Education I 3 s.h.
Investigates recent developments and relevant research in mathematics education. The student will determine a problem and investigate the problem as a project. The project must deal with a problem in mathematics, mathematics education, or computer science education. This project may be local or national in scope.

SMED 33601: Problems In Mathematics Education II 3 s.h.
Investigates recent developments and relevant research in mathematics education. The student will determine a problem and investigate the problem as a project. The project must deal with a problem in mathematics, mathematics education, or computer science education. This project may be local or national in scope.

STEM 60501: STEM: Teaching & Research Methods I 3 s.h.
Prerequisite(s): Matriculation in the MA in STEM EducationCorequisite(s): Teaching STEM in Diverse Settings (STEM 60510) and READ 305020: Content Area Literacy
{STEM 60501): STEM Teaching & Research Methods I 3 sh Prerequisite: Matriculation in the MA in STEM Education Corequisites: Teaching STEM in Diverse Settings (STEM 60510) and READ 30520: Content Area Literacy This is the first course in the 3-course STEM methods sequence for candidates in the Master of Arts in STEM Education program. Through integrated STEM coursework, candidates will focus on learning how to make content explicit; eliciting and interpret students' thinking; engage in strategic relationship-building conversations with students; analyze instruction for the purpose of improving it; and communicate with other professionals. Faculty workload: 3 sh

STEM 60502: STEM: Teaching & Research Methods II: Mathematics 4 s.h.
Prerequisite(s): B- or higher in: STEM 60501, STEM 60510,and READ 30520
This is the second course in the 3-course STEM methods sequence for candidates in the Mathematics specialization in the Master of Arts in STEM Education program. Grounded in national and state mathematics standards, the course introduces teaching models that support good mathematics teaching practices. Course activities and assignment are directly connected to the co-requisite resident experiences. The course will help prepare pre-service mathematics teachers to develop STEM pedagogy in the teaching of mathematics. This course is offered annually during the fall semester.

STEM 60503: STEM: Teaching & Research Methods III: Mathematics 5 s.h.
Prerequisites B- or higher in STEM 60501, STEM 60510, READ 30520Co-requisites: STEM 60512
This is the final course in the 3-course STEM methods sequence for candidates in the Mathematics Specialization in the Master of Arts in STEM Education program. Grounded in relevant research in mathematics and STEM education with implications for teaching practice and national and state mathematics standards, the course continues to build on teaching models that support good mathematics teaching practices. In addition, this course explores contemporary issues in mathematics and STEM education. Course activities and assignments and directly connected to the co-requisite residency experiences. This course is offered annually during the Spring semester.

STEM 60504: Professional Seminar for STEM Educators 3 s.h.
Prerequisite(s): B- or higher in STEM 60513 and STEM 60503 or STEM 60523
This is the capstone course in the MA in STEM Education and will prepare candidates for their teaching positions by focusing on issues critical to new teachers. The course is designed to support candidates in their final transition from teacher candidate to teacher. Topics include understanding school climate, developing a professional development plan, developing a plan for communicating with families, planning for the first six weeks (or unit) of school, and preparing for a substitute teacher.

STEM 60510: Teaching STEM in Diverse Settings 3 s.h.
Prerequisite(s): Matriculation in the MA in STEM EducationCorequisite(s): STEM 60501, READ 30520
This course will enable STEM Education candidates to gain a multifaceted understanding of the individual and institutional elements that impact student achievement in STEM. Candidates will investigate the role that gender, SES, race, ethnicity, home language, religion, and other identity-based aspects shape school experiences, learning, and achievement in STEM. Candidates will then learn about specific approaches and instructional practices that they can use in the classroom to promote learning for nonmainstream students, including teaching academic language, differentiating instruction and assessments, and supporting home, community and school partnerships.

STEM 60512: STEM: Clinical Practice I 1 s.h.
Prerequisite(s): B- or higher in: STEM 60501, STEM 60510; and READ 30520 Corequisite(s): STEM 60502 OR 60522
This course serves as the first semester of the yearlong teacher residency required for candidates in the MA in STEM Education. Each resident is placed in a middle or high school and attends that placement 3 full days per week during the Fall semester. Using both Rowan and placement school district measures of teaching effectiveness, supervisors will evaluate residents on demonstrated mastery of subject area content, lesson planning, and multiple instructional strategies to meet varied student needs and demonstrated ability to assess learner progress and modify instruction accordingly, manage all aspects of classroom activity, and work collaboratively with all instructional, administrative, parental, and community members of the classroom and school community. Candidates will attend their field placement 4 full days per week during the Fall semester.

STEM 60513: STEM: Clinical Practice II 3 s.h.
Prerequisite(s): B- or higher in: STEM 60502 or STEM 60522, STEM 60512 and SELN 60576; Corequisite(s): STEM 60503 OR 60523
This is the second of the two field experiences required for candidates in the MA in STEM Education. Continuing in their field placement from STEM Education Residency I, candidates will attend their field placements 4 full days per week during the Spring semester. Using both Rowan and placement school district measures of teaching effectiveness, supervisors will evaluate residents on requires demonstrated mastery of subject area content, lesson planning, and multiple instructional strategies to meet varied student needs and demonstrated ability to assess learner progress and modify instruction accordingly, manage all aspects of classroom activity, and work collaboratively with all instructional, administrative, parental, and community members of the classroom and school community. The course will run from January through June to enable candidates to engage in all end-of-year activities at their residency sites.

STEM 60522: STEM: Teaching & Research Methods II: Science 4 s.h.
Prerequisite: STEM 60501 and READ 30520 and STEM 60510; Co-requisite: STEM 60512 and SELN 60576
This is the second course in the 3-course STEM methods sequence for candidates in the Master of Arts in STEM Education program. Grounded in national and state science standards, the course introduces teaching models that support good science teaching practices. Courses activities and assignments are directly connected to the co-requisite residency experiences. The course will help prepare pre-service science teachers to develop STEM pedagogy in the teaching of science. This course is offered annually during the Fall semester.

STEM 60523: STEM: Teaching & Research Methods III: Science 5 s.h.
Prerequisites: B- or higher in STEM 60522 and STEM 60512 and SLEN 60576; Corequisite: STEM 60513
This is the final course in the 3-course STEM methods sequence for science candidates in the Master of Arts in STEM Education program. Grounded in relevant research in science teaching, this course continues to build on teaching models that support good science teaching practices. In addition, this course explores contemporary issues in science and STEM education. Course activities and assignments are directly connected to the co-requisite residency experiences. This course is offered annually during the Spring semester. Upon completion of the course, candidates will demonstrate the ability to: Set long and short-term learning goals for students referenced to external benchmark; Appraise, choose, and modify tasks and texts for a specific learning goal; Design a sequence of lessons toward a specific learning goal; Select and use particular methods to check understanding and monitor student learning; Compose, select, interpret, and use information from methods of summative assessment; Analyze instruction for the purpose of improving it; Communicate with other professionals

STEM 60524: STEM Teaching and Research Clinical Seminar I 1 s.h.
Prerequisite(s): STEM 60501
This is the first course in a two clinical seminar course sequence for all candidates in the Master of Arts in STEM Education program. This course is specifically designed to create a professional community of mutual support for MA STEM teacher candidates as they navigate and make sense of their clinical experience. Teacher candidates will learn about general pedagogical and school-related issues, and develop professional supports and dispositions that will enable them to engage with teaching as life-long learners while maintaining essential wellness and work-life balance. In addition, candidates will learn about preparing and conducting a successful search for a secondary STEM teaching position. This course is offered annually during the Fall semester.

STEM 60525: Teaching and Research Clinical Seminar II 1 s.h.
Prerequisite(s): STEM 60502 and STEM 60522 and STEM 60512
This is the second course in a two clinical seminar course sequence for all candidates in the Master of Arts in STEM Education program. This course is specifically designed to create a professional community of mutual support for MA STEM teacher candidates as they navigate and make sense of their clinical experience. Teacher candidates will learn about general pedagogical and school-related issues, and develop professional supports and dispositions that will enable them to engage with teaching as life-long learners while maintaining essential wellness and work-life balance. In addition, candidates will learn about preparing and conducting a successful search for a secondary STEM teaching position. This course is offered annually during the Spring semester.

ANTH 02202: Introduction To Cultural Anthropology 3 s.h.
This course presents cultural anthropology as a coherent system of data and theory designed to explain the variety of human group behavior, giving special emphasis to the structure and function of non-western cultures.

ANTH 02203: Introduction To Archeology 3 s.h.
This course covers the rudiments of archeological field techniques, methods of analysis and dating methods.

ANTH 02221: Human Variation 3 s.h.
In this course, the genetic, immunological, anatomical and physiological variation among modern populations of humans across the globe is examined. The course will enable students to explain human biological adaptation to the biocultural environments in which they live, as well as to understand environmental influences on the human life cycle such as on fertility, growth, and longevity. No prerequisites

ANTH 02250: Introduction to Anthropological Linguistics 3 s.h.
Students in this interdisciplinary course will engage in the scientific study of language with particular reference to the relationships among the languages, thoughts, and cultures of speech communities living all over the world, including within the United States, France, India, Canada, Spain, Japan and Peru, among others. Additional course topics include the process of human language acquisition, structures of human language, bilingualism and the ways in which race, class, gender, and other social characteristics may be displayed through the use of language. This course is offered every other year, beginning in 2009.

ANTH 02321: Cultural Ecology 3 s.h.
Prerequisite: ANTH 02202 with minimum grade of C-
This course examines the relation of human groups to their environments as mediated by culture. It emphasizes the interaction of significant variables in the natural habitat, technology, and social institutions. This course may not be offered annually.

ANTH 02510: Qualitative Research 3 s.h.
This course introduces students to methods and theories of qualitative analysis in social science research with emphasis upon contemporary understandings of ethics in the conduct of ethnographic research. Students will learn to use qualitative methodologies in needs assessment, program development, and exploratory and mixed methods research projects in fields including anthropology, criminology & criminal justice, education, economics, health science, legal studies, political science, and sociology.

DI 68590: Applied Diversity and Inclusion 3 s.h.
Pre-requisite: ANTH 02510, DI 68501 and 15 total credits
Applied Diversity and Inclusion (DI 68.590) is a three-credit course where students will have an in-depth immersive experience and learn how to develop a professional-level independent project. Students will be actively involved in a variety of experiential learning experiences and learn how to apply knowledge gained in prior coursework to the specific professional contexts in which they plan to work and/or implement programs in the future.

DI 68591: Capstone in Applied Diversity and Inclusion 3 s.h.
Pre-requisites: DI 58590 and 15 total credits
Capstone in Applied Diversity and Inclusion (DI 68.591) is a based on work completed in Applied Diversity and Inclusion (DI 68.590). Students will develop their skills in applied social research including the implementation, evaluation, and presentation of a capstone project. Students will also have the opportunity to practice leadership and partnership skills in the classroom where presentations, peer review, and consultation will be a central process of supervision and advisement of the capstone project curriculum.

DPEM 00280: Global Catastrophes 3 s.h.
This course examines the impact of natural and technological disasters around the globe from a cross-cultural interdisciplinary perspective, including hurricanes, droughts, disease outbreaks, nuclear disasters, earthquakes, etc. The course will focus on global, national, regional, and local patterns of development, examining the social, geographical, and cultural factors that put people differentially at risk before, during, and after disasters. Using a case study approach, students will explore how vulnerable social groups are affected by and cope with hazardous conditions and events, as well as study the capacities of these groups that foster resilience.

DPEM 00300: Bioterrorism and Weapons of Mass Destruction 3 s.h.
This introductory course provides an overview of the different agents of biological, chemical and nuclear weapons of mass destruction. The intelligence preparation for vulnerability analyses from nuclear, biological and chemical weapons including low-level radiation, depleted uranium, toxic industrial chemical concerns and vulnerability reduction measures that can be implemented for population protection are also addressed.

DPEM 00321: Humanitarian Response: Evacuation and Shelter Management 3 s.h.
Disasters, crisis and civil unrest pose chronic threats to human security. Such events stretch governments' capacity and diminish the effectiveness of existing systems to offer humanitarian assistance and the potential of new technologies to transform humanitarian response. The course will highlight evacuation processes and shelter management across multiple contexts including: immediate crisis, short-term/long-term sheltering, special needs sheltering, medical sheltering, and refugee sheltering. This course is an in-depth analysis of the complex ethical and resource issues along with the management skills needed to engage in humanitarian work across a variety of settings. The course will focus on "real-world" scenarios that arise in the field.

DPEM 00391: Natural and Technological Hazards: Mitigation and Response 3 s.h.
Emergency management, at its core, encompasses the recognition and management of natural disasters, technological disasters, and Na-Tech (hybrid) disasters. This course examines different types of natural hazards and integrates perspectives on risk, vulnerability, resilience, and mitigation planning through an examination of natural and technological hazards including earthquakes, tsunamis, volcanoes, floods, landslides, hurricanes, tornadoes, wildfires, climate change, and a host of technological and human-induced hazards. Moreover, the class underscores the basic tenets of emergency management as a set of diverse responses to various emergencies from the federal, state, and local perspectives, the management of mass casualties, and ways to rebuild more resilient communities following a disaster.

DPEM 00500: Complex Organizational Theory in Emergency Services 3 s.h.
This course focuses on the theory of complex organizations within the field of emergency management and critical thinking about organizations from different organizational perspectives. This course addresses organizations' responsiveness during different stages of the disaster cycle, (mitigation, preparedness, response, and recovery). Students will analyze and diagnose problems within organizations from a variety of theoretical perspectives and derive different strategies and recommendations for improving organizational performance in emergency management.

DPEM 00505: All-Hazards Threat Response Management 3 s.h.
This course employs an all-hazards approach to examine the complexities and commonalities of emergency responses to the wide variety of potential hazards that can face institutions and communities. Utilizing case studies, students examine response management to a variety of geographic, climactic, technological and terrorism-related events and learn to establish emergency management and response protocols through planning, training, and mitigation evaluations.

DPEM 00528: Research Methods and Statistics in Emergency Management and Homeland Security 3 s.h.
This course provides an overview of research and statistical approaches used to design research studies and understand data in emergency services and homeland security. Specifically, this course helps students understand statistics, models, methods, and practices used to conduct ethical research.

DPEM 00531: Cyber Security Risk Analysis in Homeland Security 3 s.h.
This course provides an overview of cybersecurity with respect to the analysis of risks from catastrophic destruction resulting from cyber attacks on critical infrastructure assets. The course provides a comprehensive review of the cyber infrastructure in the United States and will include potential social and technological solutions to guard against cyber attacks and variety of response-related options including: social, cultural, political, policy and law enforcement. Finally, the course will review the role of the cyber profession within the fields of law enforcement, intelligence professionals, emergency management and homeland security.

DPEM 00542: Public Health Emergency Preparedness and Response 3 s.h.
Pre-requisites: DPEM 00605
This course will introduce students to the knowledge, skills and competencies needed to address large- scale public health preparedness and emergency response. This course explores public health aspects of surveillance, mitigation, preparedness, response, and recovery from major categories and classification of disaster events including epidemics and weapons of mass destruction. Other course topics include how the public health system integrates with the National Response Plan and Framework and teaching students how to use the Threat and Hazard Identification and Risk Assessment (THIRA) to determine community vulnerabilities.

DPEM 00544: Emerging Health Threats: Risks, Surveillance, and Policy 3 s.h.
This course offers an advanced perspective on risks, surveillance, and public policies enacted as part of an overall disaster preparedness and emergency response to infectious diseases. In addition to presenting the latest disease surveillance protocols, the course will examine policies and regulatory measures undertaken to protect public health as public officials and emergency managers seek to balance community safety with individual liberties. Specific topics to be covered in the course of this class include surveillance systems (indicator-based, event-based, and event-related), surveillance data and trends, pandemics, vulnerable populations, Public Readiness and Emergency Preparedness (PREP) Act, quarantines, international issues, and disease case studies.

DPEM 00550: Disaster Policy and Legal Environment in Emergency Management 3 s.h.
This course examines the complex framework of political and social policy issues related to addressing natural, technological and terrorism disasters. Federal and state-related policies and legal considerations at the mitigation, preparation, response, and recovery stages of the disaster cycle will be emphasized.

DPEM 00600: Public Budgeting and Finance for Emergency Managers 3 s.h.
This course focuses on government fiscal management duties as they relate to emergency management and emergency services administration: the area generally known as public finance or fiscal administration including public economies and policy, budgeting, revenue policy and taxation, financial management, and politics. Key to this course will be the fiscal administration of disasters and crisis at every phase of the disaster cycle from planning to recovery. Students are exposed to departmental budgeting, revenue structures and tax administration, financial risk management, and government and corporate grants and grants administration.

DPEM 00610: Advanced Exercise Design and Evaluation 3 s.h.
This course focuses on designing and implementing successful disaster exercise programs based on The National Preparedness Goal and real-world events. The process of designing exercises is explored in depth, and methods of conducting and evaluating exercises are discussed and analyzed. Students will participate in developing, conducting and evaluating an emergency preparedness tabletop exercise and will gain an understanding of computer-assisted exercises. Critical issues examined include: coordination, business recovery, damage assessment, hazard vulnerability analysis, risk management, and agency interaction.

DPEM 00615: Management of First Responder Organizations 3 s.h.
This course is designed to enhance the students understanding of organizational leadership and management within public sector emergency operations and incident response with specific application to public/law enforcement safety agency management, fire safety management and emergency medical management.

DPEM 00632: Disaster Recovery Strategies and Planning for Emergency Managers 3 s.h.
The course examines the importance of addressing the needs of the affected population as well as the roles and responsibilities of various agencies and personnel involved in disaster recovery process. Planning for disaster recovery before disasters occur can significantly enhance the post-disaster recovery process. This course will address the complexities of disaster recovery plans as part of a long-term recovery planning process. Students will get the opportunity to review existing disaster recovery plans and develop model plans. The goal of this course is to prepare students to evaluate and develop disaster recovery plans in the context of a whole community framework to planning and comprehend post-disaster challenges in the recovery process.

DPEM 00633: Global Crisis Monitoring, Conflict Analysis & Early Warning Systems 3 s.h.
Pre-requisites: DPEM 00651
This course highlights the collection and analysis of global security information for rapid decision making in early response components of early response monitoring systems to address catastrophe within an all-hazards approach model. Moreover, this course will focus on threat assessment reports for possible emerging threats to peace and security and recommending the best courses of action to address ongoing crises and post-crisis transitions. Methods of intelligence gathering will be discussed along with the promotion of resilience among intelligence exchange networks.

DPEM 00639: Post-Disaster Sustainable Recovery and Community Resilience 3 s.h.
This course seeks to enhance the capacities of emergency managers and other recovery practitioners in designing, implementing, and evaluating sustainable recovery and resilience efforts based on disaster risk reduction and sustainable recovery and development principles. Students will learn to evaluate vulnerabilities and community-based collaborative strategies that will assess community resilience and develop appropriate plans to enhance sustainable redevelopment after disasters, increasing awareness of the meaningful actions to enhance community resilience through comprehensive best practices.

DPEM 00645: Advanced Incident Command: Leadership and Ethics 3 s.h.
This course will highlight leadership theory as it relates to incident command structures. The course will follow the National Incident Management System (NIMS) structure to include incident/event assessment, unified command structures, incident resource management, planning process, demobilization, transfer of command, and close out from a leadership perspective as well as ethical considerations.

DPEM 00651: Foundations of Global Threats, Risks and Response 3 s.h.
Pre-requisite: Graduate standing or permission by instructor
This course employs a systematic approach to introduce the global threat spectrum to apply an all-hazards emergency management response approach to risk analysis and prioritization. The major themes of this course will include: understanding of major forms of global risks and uncertainty, tools for global conflict and risk analysis, an introduction to early warning systems and the emergency responses to crises.

DPEM 00652: Continuity of Operations 3 s.h.
This course provides students with the theoretical, historical, and practical understanding of the development and sustaining of continuity of operations planning and programs. In this course, a variety of settings will be used to analyze how critical governmental, organizational, or institutional operations continue under a broad range of emergency, crisis, and catastrophic conditions to help foster recovery and resilience in the aftermath of emergency situations.

DPEM 00655: Threat Assessment in Homeland Security 3 s.h.
This course focuses on threat assessment and risk management processes and risk strategies and policies within homeland security. Moreover, this course addresses issues related to an understanding of key terms and incidents and the development of practical plans for providing emergency services before, during, and after natural, technological, and terror-induced hazards. The course provides an analysis of contemporary homeland security issues related to risk, risk mitigation, and key social-psychological concepts. Students will gain an understanding of social class, community, and complex organizations as they use risk assessments to address safety and security concerns.

DPEM 00689: Thesis: Emergency and Threat Response Management I 3 s.h.
Pre-requisites: DPEM 00500, DPEM 00550, and DPEM 00538
The thesis represents a sustained research endeavor on a significant thesis project under the direction of a major advisor, which will serve as the culminating academic experience for the MS in Emergency and Threat Response Management. Students will develop a research question and use a social scientific methodological approach to address the their research hypothesis.

DPEM 00691: Administrative Public Policy and Law for Public Managers 3 s.h.
This course is designed to help public leaders, public managers, and members of the private sector examine administrative agencies, problems of administrative procedure, and the methods and extent of judicial control over administrative action. The goal of course is to be able to extract rules and policy from cases, statutes, and administrative regulations and analyzing, interpreting and understanding rules and statutes by applying rules and policy to facts. More specifically, for the field of public management, the course highlights how decisions and actions taken by government agencies are monitored to hold agencies accountable.

DPEM 00692: Labor Relations and Collective Bargaining 3 s.h.
This course examines labor relations and collective bargaining via organizing, bargaining, and dispute resolution in a variety of public and private settings. Furthermore, this course will discuss current labor law to help students gain a framework for understanding labor relations concepts to prepare for future work in the public sector area of labor relations with specific case examples and discussions related to New Jersey.

DPEM 00699: Thesis: Emergency and Threat Response Management II 3 s.h.
Pre-requisite: DPEM 00689
The thesis represents the culmination of a scholarly endeavor on a significant issue in the field of Emergency Management and Homeland Security under the direction of a major adviser. This course is a continuation of Thesis: Emergency and Threat Response Management I.

DPEM 43355: Emergency Exercises-Design, Implementation and Evaluation 3 s.h.
Prerequisite(s): DPEM 43101
This course provides insight into the tasks, roles and responsibilities required to design and conduct an emergency management exercise that is a part of a long-term, carefully constructed plan in which exercises help the community prepare for disasters. Students will use a community needs assessment to develop the case for exercises, design an exercise, and outline an evaluation plan aimed at improving competence in all emergency functions. Students will also be introduced to the concept of a comprehensive exercise program used to improve on the four phases of emergency management. The course instruction will follow and meet the guidelines established by the Federal Emergency Management Agency exercise design and evaluation courses and the Department of Homeland Security Exercise and Evaluation Program.

DPEM 43395: Emergency Operations and Business Continuity 3 s.h.
Prerequisite(s): DPEM 00101 and DPEM 00400 or Permission of Instructor
This course provides a step-by-step approach to the development of a comprehensive emergency/disaster/crisis management plan for organizations (e.g. manufacturing companies, corporate officers, retailers, utilities, government agencies, or any organization where people work or gather). By analyzing how organizations prepare for, respond to, and recover from an emergency/crisis (e.g., severe winter storm) or more localized (e.g., chemical spill, building fire), this course emphasizes collaborative processes, applied methodologies used to plan and recover systems and processes when faced with various types of disaster and crisis recovery scenarios that impact communities, businesses and organizations as they seek to continue their operations. Finally, the course will emphasize how disaster preparedness directly correlates to the ability to continue organizational operations.

DPEM 43420: Risk Analysis for Disaster Preparedness and Homeland Security 3 s.h.
Prerequisite(s): DPEM 43101
This course provides an analysis of vulnerability assessment as the foundation for effective hazard mitigation by introducing and explaining various methodologies to carry out the process of vulnerability assessment. Moreover, this course will introduce students to (1) material in the risk communication/risk perception literature; (2) basic modeling techniques in quantitative risk assessment; (3) a risk management framework suitable for quantitative risk modeling and risk communication, and (4) case studies related to technological hazards and natural hazards.

DPEM 43495: Internship in Disaster Preparedness and Emergency Management 3 to 6 s.h.
Prerequisite(s): DPEM 43101 and DPEM 43400 or Permission of Instructor
This course is designed to provide students with an experience in the profession of emergency management, homeland security and disaster preparedness beyond that of the classroom.
NOTE: Additional placement requirements such as background checks and fingerprinting may be required.

HSRV 01100: Introduction to Human Services 3 s.h.
Prerequisite: BA in Human Services Majors
An interdisciplinary orientation to major Human Services agencies and institutions in this region, including social work, education, corrections, substance abuse, child welfare, mental health, recreation, geriatrics, etc. Participants will study the roles and functions of professionals in these types of Human Services careers.

HSRV 01320: Applied Ethics in Human Services 3 s.h.
Applied Ethics in Human Services provides an in-depth analysis of human services ethics, application of the National Organization of Human Services (NOHS) Code of Ethics, and concepts and dilemmas specific to service relationships. From a foundation in multicultural values, the course investigates the issues of responsible practice through critical analysis and discussion. The student will apply decision making skills and critical analysis to professional situations where standards conflict. Topics include: confidentiality, duty to warn, client rights, dual relationships, competence, multicultural issues, sanity, malpractice and expert testimony.

HSRV 01400: Senior Seminar in Human Services 3 s.h.
Prerequisite: senior standing and completion of core requirements.
HSRV 01400: Senior Seminar in Human Services - WI Senior Seminar constitutes the capstone experience for students majoring in Human Services and represents the culminating exit course for students. This course is a writing intensive experience designed to help students integrate their classroom and field experience into a coherent sense of human services as a profession as well as a sense of the student's personal commitment to the values and ethics of the profession. As a culminating experience, this course is based on a portfolio created from the experience the student has accrued during his/her participation in both the academic and experiential components of the major. Prerequisite: senior standing and completion of core requirements

HSRV 08310: Research Methods for Human Services 3 s.h.
Prerequisites: HSRV 0110, either STAT 02100 or STAT 02260 AND EITHER SOC 08120 or PSY 01107
This course introduces the student to the scientific methods used in the social sciences, the relationship between theory and methodologies of data collection and analysis, the rudimentaries of basic types of data analysis and interpretation. Given the applied nature of the human services degree, particular emphasis is placed on qualitative research methods and analyses. This course is offered annually.

MPS 22503: Foundations of Agile Management 3 s.h.
This course teaches the principles and values of Agile frameworks and helps students apply Agile practices and techniques to real-world project management. Moreover, the course is designed to demonstrate the value of project management that fosters continuous organizational development where project management is at the center of organizational change.

MPS 22510: Diversity and Labor Relations 3 s.h.
This course has two basic areas of focus, diversity as a key component in labor relations and overall labor relations with complex organizations. Also, this course provides an overview of the history of major labor movements, primary labor laws, diversity and inclusion, and the general processes (establishment of union representation, collective bargaining processes and contracts) involved in labor relations to meet the needs of a variety of work environments.

MPS 22511: Organizational Decision Making and Strategic Planning 3 s.h.
This course will integrate complex organizational theory and leadership theory with relative, practical knowledge to hone a student's decision making abilities in the workplace. Students will learn about tools in order to craft a large-scale, organizational strategic plan that can be applied to their current work environment.

MPS 22512: Complex Organization Dynamics: Leadership and Planning 3 s.h.
This course is designed to provide students with a comprehensive analysis of organizational culture, leadership, and planning skills needed in 21st century corporations. In particular, the course will address how complex organizations arise; the logic of their operation; their often unanticipated, but systematically caused problems; environmental and technological forces that alter and threaten them in response to globalization and other social, cultural, legal and economic transformations. Finally, an important aspect of the course centers on the analysis and diagnosis of problems in an organizational setting from the major theoretical perspectives and deriving different strategies and recommendations for improving organizational performance.

MPS 22513: Personnel Administration 3 s.h.
This course will provide a general overview of the management process of an organization's workforce, including talent management, succession planning, diversity, and inclusion. How an organization's personnel, or workforce, influences organizational leadership, culture, will be discussed, along with the ethical ramifications of ensuring compliance with hiring practices and labor laws.

MPS 22514: Non-Profit Organization Development and Management 3 s.h.
This course focuses on developing the skills for twenty-first century management and leadership in the non-profit corporate world. Emphasis will be place on developing the skills for a collaborative approach to leadership to help non-profit corporation managers leverage the wisdom and resources of multiple stakeholders as they come together to plan, make decisions, and take action in organizational and community settings.

MPS 22551: Foundations of Data Analytics and Reporting 3 s.h.
Prerequisite: Matriculation into Master of Professional Studies (MPS) degree program
This course will introduce business analytical models and tools used to interpret data and their implications to management decision making. The data analysis will enable students to make data driven decisions to optimize the business process and address issues to enhance organizational efficiency. Moreover, the use of data in the creation of effective business documents and oral presentations will be a key component of the course.

MPS 22600: Project Management and Team Building 3 s.h.
This course is designed to introduce project management principles and help organizational leaders strategically build teams to achieve goals related to organizational output. The course will cover core elements of project management including project scope, time and cost management, quality management, human resource considerations, communications, risk management, and procurement management. Moreover, the course examines leadership styles and the analysis of group dynamics from an interdisciplinary perspective including: psychology, sociology, organizational management, and cultural anthropology.

MPS 22699: Action Study: Master of Professional Studies Research 1 to 3 s.h.
Prerequisite(s): MPS 22500 AND MPS 22503 AND MPS 22551 AND MPS 22600
This course is designed to serve as the capstone course for the Master of Professional Studies Program. The goal of course is for students to be able to articulate, define, research and analyze a problem or challenge in their current profession or field and integrate theory, data, and practical applications to address and develop a solution to the issue. More specifically, the course will incorporate an "action study" in which the student will use their course experiences and knowledge to actively address the issue during the course as part of an action-based plan that will be developed in the context of an internship experience with support from a faculty member. The capstone course serves as the final course in the Master of Professional Studies.

SOC 08120: Introduction to Sociology 3 s.h.
This course analyzes the characteristics of social organization and focuses on the study of social relationships and interaction. It examines the social basis of behavior patterns, the nature of social problems and the possibilities for social change. (Required for Sociology majors)

SOC 08121: Introduction to Sociology for Premed Students 3 s.h.
This course provides students with a general understanding of the theoretical, conceptual, and methodological approaches to studying people in groups, institutions, societies and interpersonal interaction. It examines some of the realities of everyday life and critically analyzes perceptions of these social phenomena. Special attention is given to understanding social phenomena with particular relevance to health and medicine, as well as a wide range of other social arenas.

SOC 08221: Social Problems 3 s.h.
This course examines major social problems in the society as a part of the ongoing social process, with particular reference to their economic, political and other social roots. Topics covered can include such areas as mental illness, poverty, structured inequality, various forms of addiction, war, racism and crime.

SOC 08223: Sociology of Social Welfare 3 s.h.
Prerequisite: SOC 08120 or SOC 08121 with minimum grade of C-
This course examines the socio-historical development of social welfare, focusing upon changes in the theory and practice of social welfare in American and other societies. This course may not be offered annually.

SOC 08230: Sociology Of Minority Groups 3 s.h.
Prerequisite: SOC 08120 or SOC 08121 with minimum grade of C-
This course analyzes the nature of the relationships among ethnic, racial and other groupings in our society. It examines and tests sociological theories by the study of specific past and present minority group situations.

SOC 08323: The Sociology of Social Work 3 s.h.
Prerequisites: SOC 08120 AND SOC 08121 with minimum grades of C-
This course examines the socio-historical development of social work, giving attention to the processes of casework, group work and community organization as well as aspects of social work as a profession. This course may not be offered annually.

SOC 08325: Deviant Behavior and Social Control - WI 3 s.h.
Prerequisite: SOC 08120 or SOC 08121 with minimum grade of C- AND COMP 01112
This course explores the major theoretical and research issues in the study of deviant behavior. Then, drawing on a wide variety of types of deviant behavior, the course studies three levels of social reality: the interpersonal, the organizational and the structural. The course seeks to place deviant behavior within the context of traditional social processes and structures. Writing Intensive (WI)

SOC 08326: Socialization of the Child Through Adolescence - WI 3 s.h.
Prerequisites: (SOC 08120 OR SOC 08121 with minimum grade of C-) AND COMP 01112
This course focuses upon the processes and social forces which facilitate the ways in which individuals are prepared to enter various groups within the life cycle. Writing Intensive (WI)

SOC 08328: Sociology of Disasters and Crisis 3 s.h.
This course explores disasters and emergency response via a sociological lens and examines the need to systematically understand the social impacts of such tragic events. Participants will learn how to be better prepared to function as an effective member of their community to enhance the chances of improving preparedness, mitigation, and response to possible natural or technological hazards. Furthermore, this course will include discussions of disaster types, individual and collective vulnerabilities of various populations to disasters, disaster-related organization and social policies, issues of disaster preparedness, the media and disaster response, and challenges/opportunities of disaster recovery and prevention.

SOC 08331: Classical Sociological Theory 3 s.h.
Prerequisite: SOC 08120 or SOC 08121 with minimum grade of C-
This course studies the historical and conceptual development of the major schools of thought within the "sociological tradition." It emphasizes an understanding of the nature of theory and systems of theory, the application of theory, the problems inherent in theorizing about society and social life and the relations between sociological theory and research. (Required for sociology majors)

SOC 08332: Contemporary Sociological Theory 3 s.h.
Prerequisites: SOC 08120 with minimum grade of C-
Contemporary Sociological Theory covers sociological theory developed in recent times. Contemporary Sociological Theory examines the state of the field in the twentieth and twenty-first centuries, focusing on theoretical issues and frameworks that have come to define sociology, its research and methods. It will include consideration of the Parsonian structural functionalism of the 1950s, the critique of Positivism that emerged during the 1960s, and the fragmentation of the field into the many current perspectives and approaches.

SOC 08339: Sociological Practice 3 s.h.
Prerequisites: SOC 08120 or SOC 08121 with minimum grade of C-
This course focuses on using sociological theories and concepts, research methods, and ethical decision-making processes to solve problems. Sociological practice occurs at all levels from the individual to societal. The course links the student to a variety of career pathways and occupational settings, including mental health, rehabilitation, work in prisons, and youth and family services.

SOC 08353: Sociology of Complex Organizations 3 s.h.
Prerequisite: SOC 08120 or SOC 08121 with minimum grade of C-
This course discusses the major theories and research in complex and formal organizations, giving special attention to a variety of organizational types, including industrial, service and non-profit. It emphasizes examining varying organization types with respect to their size, structure, environments and their dynamics of innovation and change.

SOC 08375: Sociological Research Methods 3 s.h.
Prerequisite: SOC 08120 or SOC 08121 with minimum grade of C-
This course introduces the student to the scientific methods used in the social sciences, the relationship between sociological theory and methodologies of data collection and analysis, the rudimentaries of basic types of data analysis and interpretation. Students will learn to read and summarize basic scientific reports, to critically analyze and evaluate reported research findings in the social sciences, and to recognize ethical concerns associated with sociological research. (Required for Sociology majors)

SOC 08376: Social Statistics 3 s.h.
Prerequisites: SOC 08120 or SOC 08121 with minimum grade of C-
This course familiarizes the student with the basics in elementary statistical methods used in the social sciences and the uses and misuses of statistics for various purposes. The student will learn to calculate and understand the proper use of basic statistics commonly used in the social sciences. (Required for Sociology majors)

SOC 08399: Sociology of the Holocaust - WI 3 s.h.
Prerequisite: SOC 08120 or SOC 08121 with minimum grade of C- AND COMP 01112
This course primarily deals with structural and experiential dimensions of the genocidal process affecting the European Jews, their ethnicity, culture and religious communality after 1933. Gypsies, Jehovah's Witnesses, prisoners of conscience, Russian prisoners of war, the Polish intelligentsia, who with the Jews, became a subject of Nazi persecution are also among those remembered. The Holocaust or shoah will provide a model for compassionate insight into the experience of other persecuted ethnic and religious minorities or any who suffer disadvantage due to long-standing discrimination, such as women and homosexuals. Special emphasis will be given to understanding the interpersonal processes which are part of survival and transcendence of situations where we find society against the self. Writing Intensive (WI)

SOC 08401: Human Service Organizations 3 s.h.
Prerequisite: SOC 08120 or SOC 08121 with minimum grade of C-
This course will focus on the micro and macro aspects of human service organizations of various kinds; for example, hospitals, courts, nursing homes, public agencies, schools, and the like. These organizations will be examined in terms of their structure, delivery of services, their function of "processing" human beings, the internal and external environments in which they operate, and the policy implications for delivery of services and organizational change.

SOC 08425: Sociology Senior Seminar 3 s.h.
Prerequisites: Minimum grades of C- in SOC 08120 AND SOC 08331 AND SOC 08375 AND SOC 08376
This seminar is a capstone experience designed to help students integrate what they have learned as sociology majors in a liberal arts setting. Students will engage in oral discussions and presentations as well as written exercises and essays to demonstrate an understanding of the sociological perspective, theoretical approaches and methods. The substantive focus of the seminar will vary by instructor.

SOC 08429: Organizational Response to Disasters and Crisis 3 s.h.
Prerequisite(s): SOC 08120 with minimum grade of C-
This course will help students understand the complex social organizations and organizational responses to disasters. A secondary goal of this course is to learn to understand and utilize the vast research published in this interdisciplinary field, while maintaining a specific focus of the sociological core of the research. Students will gain a familiarity with local, state and federal disaster-related organizations and how they respond within the bureaucratic structure to facilitate social recovery in the aftermath of disasters and crisis to enhance the chances of improving disaster preparedness, disaster mitigation, and disaster response to possible natural, human-induced or technological hazards. Furthermore, this course will include discussions of disaster-related organization and social policies, issues of disaster preparedness, the media and disaster response and challenges/opportunities of disaster recovery and prevention.

SOC 08430: Case Management Intervention in Sociological Practice 3 s.h.
Prerequisites: SOC 08120 AND SOC 08121 with minimum grades of C-
This course emphasizes effective case management practice at the micro, mezzo, and macro levels of system intervention for populations at risk; Application of systems thinking to case management issues with individuals, families, and groups; Issues of aging, family mental health, child welfare, adult services and health are interwoven into practice scenarios in an effort to explore the multiple social problems faced by groups in a social service organization on a regular basis.

SOC 08494: Field Experience Seminar in Sociology - WI 3 to 6 s.h.
Prerequisite: SOC 08120 or SOC 08121 with minimum grade of C- AND COMP 01112
This seminar provides the opportunity for students to be engaged in a field experience which will contribute to their sociological development. Students interact with their instructor and the other students in the seminar in the development, supervision and completion of individual projects. Areas of interest may include sociological research, analysis of social agencies and the development of affirmative social action programs.
Writing Intensive - WI

SOC 08550: Colloquium in Social Justice 3 s.h.
This course introduces students to in-depth analysis of a selected theme in social justice, including sociological theories, models, and method used for that topic as well as intensive research, data analysis, problem solving, and class discussion on the topic. Selected topics may include race/ethnicity, immigration/nativity, disability, class, religion, gender and sexuality.

SOC 08551: Colloquium in Urban Sociology 3 s.h.
This course introduces students to in-depth analysis of a selected theme in urban sociology, including sociological theories, models, and method as well as intensive research, data analysis, problem solving, and class discussion. Selected topics include (but are not limited to) urban demographics, urban growth and contraction, gentrification, urban environments, urban health, global cities.

SOC 08552: Colloquium in Medical Social Science 3 s.h.
This course introduces students to an in-depth analysis of a selected theme in medical social science, including sociological and anthropological theories, models, and methods, as well as intensive research, data analysis, problem solving, and class discussion. Selected topics include (but are not limited to) death, dying and bereavement; spirituality and health; ecologies of health; epidemiology; ethnomedicine; social movements in health.

SOC 08570: Integrating Qualitative and Quantitative Methods 3 s.h.
This course is designed for students who are interested in careers that involve social research. It trains students to integrate qualitative and quantitative methods to produce knowledge that cannot be produced through a single-method study. Students will pose a research question of social and scientific importance, design an appropriate integrated methods study to produce answers, and conduct original research. Students will link their methodological procedures with their research purpose, explain how the integration of qualitative and quantitative methods can advance knowledge production, and practice ethical research.

SOC 08575: Social Determinants of Health: Theory and Intervention in Urban Settings 3 s.h.
This course expands categories of disease risk beyond disease pathology and individual factors to psychological and sociological phenomena within an urban context. Moreover, this course seeks to describe the relationship between these conditions and health or health outcomes focused on factors such as water and air quality and food safety. More recent public health efforts have identified a broader array of conditions affecting health, including community design, housing, employment, access to health care, access to healthy foods, environmental pollutants, and occupational safety. The link between social determinants of health, including social, economic, and environmental conditions, and health outcomes is widely recognized in the public health literature to address persistent and pervasive health disparities.

SOC 08578: Critical Race Theory: Application and Intervention 3 s.h.
Students will explore the social construction of race and the subsequent implications this phenomenon has for particular members of society. Building upon the origins of the Critical Legal Studies Movement and Critical Raced Theory (CRT), students will examine their own dispositions for significant issues from the centrality of race, class and gender to better understand the need for becoming social justice advocates while learning a variety of social justice intervention strategies. Specific attention will be focused on the medical/clinical setting where issues of race, class and gender can pose barriers to culturally competent care for clients.

SOC 08580: Survey Design and Analysis 3 s.h.
This course will provide students with the tools needed to engage in quantitative survey design and analysis for a variety of needs and settings, including needs assessment for community, government, non-profit or business organizations. Students will learn to analyze survey data both from primary and secondary sources, using statistical procedures, and to write up conclusions and reports intelligible to a broad range of audiences. Presentations will provide practice in oral, written and graphic dissemination of results.

SOC 08590: Social Change 3 s.h.
This graduate course covers prevailing theories of social change, examples of current changes occurring in society, how sociological perspectives contribute to social policy and collective action to implement these changes.

SOC 08591: Social Dynamics of Political Violence, Insurgency and Civil Unrest 3 s.h.
Non-state political violence has become one of the major public policy issues in both US foreign policy and increasingly as well in domestic policy by examining policy decisions made in response to both terrorist attacks and the threat of terrorism in homeland security planning, border security, and surveillance. The course emphasizes international non-state violence, such as terrorism, militancy, insurgency, guerilla warfare, low-intensity conflict and civil war, and how communities, states and regions respond. By examining numerous international case examples of responses to terrorism through emergency response organizations, community organizations, and volunteerism, students will have a better understanding of the significance of social factors that serve as catalyst for the root causes of terrorism and factors that strengthen community resilience following terrorism and civil unrest.

SOC 08599: Urban Environmental Health 3 s.h.
This course examines a broad range of factors affecting public health in urban environments within the context of essential formal public health infrastructures and informal settlements. An in-depth analysis of how increased exposures of industrial toxins, sanitation, air and water quality, poverty, geographic dispersion and how social environments place stress on city inhabitants collectively affect a city's health, as well as how these cities can respond to meet the increased challenges will be explored.

SOC 08600: Social Experience of City Life and Urban Inequalities 3 s.h.
This course will utilize a social psychological perspective, symbolic interaction, to understand urban dynamics. The course will focus on the study of the historical transformation of the city and the creation of social and psychological order in cities, an in-depth study of how the physical and social settings of cities influence health and behavior and how reciprocally urban behavior influences the physical and social settings. A considerable amount of time will analyze urban public behavior and its social psychological consequences in terms of how people conduct their daily routines with strangers, friends, relatives, and neighbors. Everyday interaction patterns of urbanities – pedestrian, transportation, shopping patterns, sports, parks, playgrounds, museums, theaters, etc. – will be analyzed. Moreover, attention will be turned to the study of urban communities and lifestyles of different social classes concerning urban inequality and social differences. The social and psychological consequence of living in the city is a major theme of concern for this course.

SOC 08642: Global Environmental Justice and Social Change 3 s.h.
The central issue of this course is global environmental inequity and social justice. The course critically examines literature and data on global environmental justice, its historical context, and changing political, social, economic, cultural approaches to environmental policies in an international context. Students in this course will analyze and critically evaluate real-world environmental justice cases and the responses to those cases and propose socially just mechanisms to address the disproportionate effects of environmental degradation.

SOC 08690: Urban Research Studio 3 s.h.
From community-based research and data collection to conduct original research to policy analysis, program evaluation, or projects that introduce new novel approached to addressing urban health issues, this is a project-based course that can take a variety of formats. Ideally, with the consultation of an advisor, each participant in this course will undertake a research project. The results of this research may be an academic paper, a health policy position paper, a community education documentary or the submission of a grant application to seek funding for future programmatic needs or future research.

SWK 01510: Research Methods in Social Work 3 s.h.
Prerequisite(s): STAT 02260
This course examines social work research methodology and the scientific, analytical approach to gaining knowledge. Students are introduced to the entire research process: posing a research question; conducting a literature review; generating a hypothesis; identifying the different kinds of variables, ethical and political issues, gender and ethnic issues, measurement issues, questionnaire construction, sampling, data collection, coding, data analysis, and communication of results. MSW graduate students develop a literature review and design their own research proposal. This course is open only to social work majors.

SWK 01515: Disparity, Systemic Inequality and Social Work Ethics 3 s.h.
Co-Requisite(s): SWK 01525
This course will explore the professions' early roots in social and economic justice and the forces of systemic oppression that maintain inequality. Students will develop skills to recognize and assess power, privilege and the intersection of cultural values, systems and structures. Students will also explore equitable and inclusive communities, institutions, policies and interventions consistent with the core foundational commitment to human rights and social work ethical mandates.

SWK 01525: Introduction to Generalist Social Work Practice 3 s.h.
This course introduces social work roles and the range of practice environments. Central tenants of professional practice recognized by accreditation and licensing bodies and professional ethics are presented as part of a unifying professional mission grounded in advocacy, human rights and social justice for marginalized and oppressed people and communities. Generalist social work skills are explored and practiced across a variety of populations and settings.

SWK 01530: Social Policy, Advocacy and Practice 3 s.h.
Prerequisite(s): SWK 01525
This course introduces macro practice; identifying problems at the community and organizational level; organizing and building relationships within communities and organizations; and organization-based/ community-based policy making, planning, and program development. Students will build generalist social work practice skills preparing for work in groups, agencies and organizations.

SWK 01540: Mental Health Assessment Across the Lifespan 3 s.h.
Co-requisite(s): SWK 01525
This course explores mental health and well being across developmental stages throughout the life cycle. Intra societal differences in illness and the ecological distribution of mental health disorders are introduced in the context of biological, sociological, cultural, psychological and spiritual theories of development consistent with social works' person-in-environment framework. Prevalent categories of psychiatric disorders are considered with respect to their relevance for social work practice and students are introduced to diagnosis, diagnostic tools, assessment and biopsychosocial interviews.

SWK 01550: Generalist Field Work and Seminar in Social Work I 3 s.h.
Co-Requisite(s): SWK 01525
This is the introduction to field experience and companion seminar for the MSW generalist foundational year. Students will practice social work in agency settings under qualified professional supervision and apply theory with advanced professional practice in field and seminar discussions.

SWK 01610: Advanced Social Work Research, Evaluation, Planning and Administration 3 s.h.
Prerequisite(s): SWK 01510
This course examines the integration of research in program administration and evaluation. The application of research for strategic planning and program development for human service organizations is explored within cultural context/s. This course builds on the introductory research course and applies data access and analysis skills as the basis of program evaluation.

SWK 01620: Social Work Supervision and Leadership 3 s.h.
Prerequisite(s): SWK 01540 and SWK 01525
This course explores administrative and clinical social work supervision. Theoretical and conceptual models of supervision provide a framework for social work roles in performance evaluation and professional development in agency leadership. The unique role of clinical supervision in social work is also explored with particular emphasis on cultural competence and use of self.

SWK 01630: Mental Health and Healthcare Policy 3 s.h.
Prerequisite(s): SWK 01530
This course explores how health and mental health policy shape social work interventions and service delivery. Analysis of health and mental health policy issues such as access, financing and reform are explored in the context of the social construction of illness, health care determinants and the integration of health and behavioral health. Race, ethnicity, gender, disability, and socio economics are considered as part of a health equity approach to health and well-being.

SWK 01640: Impact and Intersections of Mental Health, Substance Abuse, and Trauma 3 s.h.
Prerequisite(s): SWK 01540 and SWK 01545
This course examines the physiological, neurobiological, psychological, and social impact of traumatic stress on the mind, body, and social environment and the integration of this framework in addictions and mental health treatment. There will be a focus on strengths-based practice and the identification of protective factors that foster resiliency . This course also addresses use of trauma informed practices to effectively support individuals and families across the lifespan.

SWK 01650: Advanced Field Work and Seminar in Social Work I 4 s.h.
Prerequisite(s): SWK 01551
This is the beginning field experience and companion seminar for the MSW specialization year. Students will practice social work in agency settings under qualified professional supervision and apply theory with advanced professional practice in field and seminar discussions.

SWK 01651: Advanced Field Work and Seminar in Social Work II 4 s.h.
Prerequisite(s): SWK 01650
This is the final field experience and companion seminar for the MSW specialization year. Students will practice social work in agency settings under qualified professional supervision and apply theory with advanced professional practice in field and seminar discussions.

SWK 01660: Emerging Approaches to Integrative Health and Well Being 3 s.h.
Prequiste(s): SWK 01545 and SWK 01530
This course explores the unique role of social work in new and emerging approaches to integrative health and well being. Students will gain exposure to a range of practice orientations and consider their application and integration across a range of social work settings/ practice areas. Central tenants of professional social work are explored and evaluated in the context of these developing models.

SWK 01670: Transdisciplinary Social Work Practice and Integrated Care 3 s.h.
Prerequisite(s): SWK 01545 and SWK 01620
This course is part of the second year MSW specialization course sequence and explores the role of social work in the development of transdisciplinary practice. The integration of behavioral health and physical health will be explored through clinical and organizational perspectives. Central tenants of professional social work practice and ethics are also explored and evaluated in the context of developing models and settings.

THD 07501: Introduction To Graduate Theatre Study 2 s.h.
This course examines basic tools for graduate research in theatre. Students learn to analyze, support and present written research at the level expected of a graduate student. Their writing style will be evaluated and writing exercises will be critiqued. In addition, students will review scholarly documentation and look at various approaches the writer can take to assemble a thesis proposal.

THD 07502: Studies In World Theatre History And Criticism 3 s.h.
Through the study of landmark works of drama and dramatic theory, this course investigates style, form and production methodology in selected periods of European and Asian theatre from the Classical Age to 1915. A research paper is required.

THD 07503: Studies In American Theatre History And Criticism 3 s.h.
Building on student background and interest, this course will focus on the history of theatre in America from the colonial period through America's emergence as a world theatre force (the work of O'Neill and others) to the post-modern experiments of today. Students will investigate the work of major playwrights, critics, theatre practitioners and theorists across a broad cultural and social spectrum.

THD 07505: Independent Study In Graduate Theatre And Arts Administration 1 to 3 s.h.
Prerequisite: Permission of the departmentGraduate Committee
Students will pursue research in an area of theatre study determined by the student in consultation with the adviser. The project can include examination of performance activities, historical or critical concerns or any other area of concern to the student.

THD 07507: Challenges In Design & Technical Production 3 s.h.
The activity in this course will examine specific set, costume and lighting design and technical production challenges presented by the stylistic and physical demands of a script. The student will be required to research and create practical solutions within an overall design concept.

THD 07508: Seminar In Directing: Working With The Actor 3 s.h.
This course explores techniques employed by the director working with actors during the rehearsal period. Topics include: conducting efficient rehearsals, improving physical and vocal effectiveness, guiding characterizations, stimulating emotional credibility and creating ensemble. Examination of source works on acting and directing is augmented by observation and demonstration.

THD 07509: Special Problems In Directing 3 s.h.
Utilizing research, discussion and a laboratory format, the student will explore advanced concerns of staging and style. This course will focus on topics selected from the following: specialized blocking situations; regionalisms, dialect and verse dialogue; historical production styles; non-realistic production styles; post-modern approaches to acting and directing; the role of gender in directing; the semiotics of directing. The course culminates in a final scene project.

THD 07511: Production/Performance/Arts Administration Project 3 to 6 s.h.
Prerequisite: Permission of the departmentGraduate Committee
This course enables students to use production or arts administrative work as a centerpiece for a reflective and faculty supervised research project. Students may write, design, direct, choreograph, perform or conduct practical field research in arts administration either on the Rowan campus or at a faculty approved professional arts venue. Combined with further research and writing, the project provides the student with an in-depth look at production activity in a wider context. The prospective project must be approved by and supervised by department faculty. This project may also serve as the capstone experience for the M.A.in Theatre: Arts Administration or the Graduate Certificate in Theatre.

THD 07515: Internship In The Arts 3 to 6 s.h.
Prerequisite: Permission of the departmentGraduate Committee
This course offers credit for faculty supervised, practical experience with a theatre or arts-related company, in acting, directing, design/production, management or dramaturgy. In general, 3 semester hours are given for a full semester or summer in such a setting and students must complete a comprehensive, reflective report and/or journal of their activities. The course may be repeated to a maximum of 6 S.H.. The prospective internship and duties must be approved by and supervised by department faculty in advance.

THD 07520: Thesis Research And Writing 3 to 6 s.h.
Completion of 17 s.h. in the theatre program and approval of advisor is required. This credit is earned for time spent researching and writing the master's thesis under the supervision of a faculty adviser. The student reports to the adviser on a regular basis during this period. The finished thesis must be approved by a committee composed of the adviser and two other faculty designated by the department. The 6 s.h. of credit may be taken all at one time or be divided between two terms (3 s.h. each).

THD 07525: Theory And Practice In Teaching Theatre K-12 3 s.h.
This course presents teaching/learning theory and its application in K-12 theatre education. Students will learn to design and teach theatre arts experiences, observe and evaluate teaching, and develop resources, including instructional plans for a multi-week unit, for teaching at the elementary and secondary level. Through this course, students will actively learn the knowledge and skills needed to teach an effective K-12 theatre curriculum.

THD 07530: ARTS ADMINISTRATION LEADERSHIP 3 s.h.
This course provides an overview of the administrative functions of non-profit arts organizations and explores the theories and practices behind decision-making in arts organizations today. The course will focus on analyzing concepts for managing arts organizations, including organizational plans, managing boards, fund-raising, human resources, facilities, program development, and effective evaluation.

THD 07531: Producing And The Arts 3 s.h.
This course examines the relationship between the artistic quality and the financial reality of an arts organization. Through lecture, discussion, and projects, students learn about basic accounting, short- and long-term budgeting and planning, and financial managment in relation to arts organizations.

THD 07532: Arts Planning: An Elegant Process 3 s.h.
The purpose of this course is to introduce students to the artistic process as it relates to planning. By applying the artistic process to planning as the unifying principle, students will understand how artistic behaviors inform organizations to achieve health and dynamic balance. Through lectures, written assignments and discussion students will be led through a planning process and examine professional leadership, vision, core beliefs and values, internal and external relationships, organizational format and equation, planning, assessment and adaptive processes.

THD 07533: Audience Development 3 s.h.
The purpose of this course is to provide an overview of basic arts and audience development, behavior and research. Coursework assists students in forming a comprehensive understanding of audience development, while providing frameworks for the practical application of audience development in non-profit arts organizations.

THD 07534: Education & Outreach Programs In The Arts 3 s.h.
Education programs allow arts institutions to interact with their communities in a deeply connected manner, build future audiences and provide both children and adults with a deeper appreciation for the place of the arts in their lives. This course studies the development and implementation of such programs within arts institutions ranging across the span of all the artistic disciplines.

THD 07535: Curatorial Practice In The Arts 3 s.h.
This course focuses on the dynamic field of curatorial practice in contemporary art and performance. Through the study of the changing perception of the role of the curator as one who has traditionally "cared for" objects of art, to one who innovates, mediates, critiques and produces, students will gain knowledge of how exhibitions bring works of art and performance to the public. In addition students will research the role of technology and other evolving forms of curatorial practice.

THD 07536: Fundraising & Development for the Arts 3 s.h.
This course focuses on how fundraising and development supports arts organizations and aids in setting and achieving institutional goals and missions. Students will prepare an annual fundraising plan, a long form grant proposal, learn to determine program fundability and identify arts funding opportunities across four funding categories: individuals, foundations, corporations, and government agencies. Assignments also include setting realistic goals and objectives for different arts fundraising/development activities, evaluating success and sustainability to secure future funding and using new media, print, broadcast and digital media to build support for their chosen arts organization.

THD 07537: Advocacy and Arts Policy 3 s.h.
What is public policy? How do we define 'Arts" as a policy sector? What are the points of view of individuals, communities and organizations and how do they impact the development of government policies for the arts? Students will examine research to develop a broader framework related to the relevance and importance of the arts in our society. Students will develop an understanding of the relationship between public policy and the arts in the United States. This course is designed for students with the knowledge and skills to craft an effective argument about arts policy, to make a policy recommendation based on research and analysis and to present that argument.

THD 07542: Theatre of the Holocaust 3 s.h.
This class provides students with the historic and dramatic background needed to comprehend and explore difficult issues surrounding the World War II Holocaust through the lens of dramatic literature. Students will gain an understanding of how playwrights and other artists use performance and theatre to explore a catastrophic "unthinkable" historic event.

AFRI 16540: Special Topics In Foreign Languages And Literatures 3 s.h.
This course brings new perspectives and themes to the established Foreign Languages and Literatures curriculum. Eash semester the instruction of this course rotates among faculty memebers who select topics according to their current scholarly interests. In this way, the course expands options for upper-level electives.

ARAB 12540: Special Topics In Foreign Languages And Literatures 3 s.h.
This course brings new perspectives and themes to the established Foreign Languages and Literatures curriculum. Eash semester the instruction of this course rotates among faculty memebers who select topics according to their current scholarly interests. In this way, the course expands options for upper-level electives.

CHIN 07540: Special Topics In Foreign Languages And Literatures 3 s.h.
This course brings new perspectives and themes to the established Foreign Languages and Literatures curriculum. Eash semester the instruction of this course rotates among faculty memebers who select topics according to their current scholarly interests. In this way, the course expands options for upper-level electives.

FREN 02540: Special Topics In Foreign Languages And Literatures 3 s.h.
This course brings new perspectives and themes to the established Foreign Languages and Literatures curriculum. Eash semester the instruction of this course rotates among faculty memebers who select topics according to their current scholarly interests. In this way, the course expands options for upper-level electives.

GERM 03540: Special Topics In Foreign Languages And Literatures 3 s.h.
This course brings new perspectives and themes to the established Foreign Languages and Literatures curriculum. Eash semester the instruction of this course rotates among faculty memebers who select topics according to their current scholarly interests. In this way, the course expands options for upper-level electives.

ITAL 04540: Special Topics In Foreign Languages And Literatures 3 s.h.
This course brings new perspectives and themes to the established Foreign Languages and Literatures curriculum. Eash semester the instruction of this course rotates among faculty memebers who select topics according to their current scholarly interests. In this way, the course expands options for upper-level electives.

LAT 09540: Special Topics In Foreign Languages And Literatures 3 s.h.
This course brings new perspectives and themes to the established Foreign Languages and Literatures curriculum. Eash semester the instruction of this course rotates among faculty memebers who select topics according to their current scholarly interests. In this way, the course expands options for upper-level electives.

RUSS 06540: Special Topics In Foreign Languages And Literatures 3 s.h.
This course brings new perspectives and themes to the established Foreign Languages and Literatures curriculum. Eash semester the instruction of this course rotates among faculty memebers who select topics according to their current scholarly interests. In this way, the course expands options for upper-level electives.

SPAN 05540: Special Topics in World Languages 3 s.h.
This course brings new perspectives and themes to the established Foreign Languages and Literatures curriculum. Eash semester the instruction of this course rotates among faculty memebers who select topics according to their current scholarly interests. In this way, the course expands options for upper-level electives.

MAWR 01546: CONTEMPORARY RHETORIC 3 s.h.
This course introduces students to rhetorical theory, classical through modern. Against a backdrop of Sophistic, Greek, and Roman rhetorics and their contemporary applications, students will consider major contemporary rhetorical theories by I.A. Richards, Kenneth Burke, James Kinneavy, and others. In addition to responses to these theoretical works, students will produce a rhetorical analysis of a text or texts from their own area of interest, investigating how the application of rhetorical strategies produces particular outcomes with particular audiences.

MAWR 01549: Issues In Composition Studies 3 s.h.
Issues in Composition Studies examines the dominant theories, texts and ways of knowing that are fundamental to the discipline of composition/rhetoric. Topics include current and historical perspectives on the composing process, the formation and functions of discourse communities, writing as a social process and methods of assessment. The course will demonstrate various avenues for research and teaching in composition and rhetorical studies, will provide students with knowledge necessary to construct a theoretical model for the everyday teaching of writing and will assist students in applying and refining that model.

MAWR 01554: Core I: Theories and Techniques of Writing 3 s.h.
Core I offers an indepth examination of theories of composing, focusing on the interdisciplinary nature of writing through inquiry into rhetorical elements common to all writers, for example, genre, tone, audience, point of view, and voice. It also considers basic principles and techniques of writing, including narration, dialogue, exposition and style. Students will examine many genres of writing and compare and contrast the application of techniques to the differing genres.

MAWR 01555: Writing for Electronic Communities 3 s.h.
This course presents the rhetorical, social, and practical dimensions of writing in electronic (cyber) contexts. Students focus both on the various roles an individual creates and maintains when writing for different cybermedia formats and the kinds of conventions, concerns and grammars that exist in discrete electronic systems like the World Wide Web, listservs, distribution lists, the Intranet, e-mail, and hypertext. Seminar presentations and a semester-long project in a concentrated area of writing for a particular electronic community demonstrate students' ability to communicate on-line.

MAWR 01556: Assessment of Writing 3 s.h.
Assessment of Writing examines the dominant methods, issues and concerns that are central to the discussion and evaluation of students' written work. Topics include current and historical perspectives on writing assessment, the use of various models of writing assessment, the political and legal issues connected to writing assessment, and the validity and reliability of assessment models. The course will introduce students to the types of assessment models used in the field of composition, will explore the effectiveness of comments on papers, and will examine how to assess errors in writing. This class will also provide students with knowledge necessary to apply a range of assessment models in the application of writing across multiple workplace situations, and will assist students in applying and refining those models to new developments in computer-assisted writing.

MAWR 01557: Writing Freelance Features 3 s.h.
Students in this graduate level writing course will learn how to develop ideas for feature-length stories (such as profiles, trend pieces and human interest pieces) and how to research and write features on a variety of topics. They will learn how to structure feature stories, including longer (8,000-plus words) stories; how to write feature leads and "nut grafs;" and how to edit their own work to prepare it for submission. Finally, they will learn how to develop and present stories and story ideas to editors at both print and digital publications and how to submit their completed work for publication.

MAWR 01558: Fiction Workshop 3 s.h.
Students will complete, through the composition of a first draft and revision, works of literary fiction with emphasis upon the short story. In addition, students will read a body of published stories that illustrates such elements of fiction as setting, point of view, characterization and dialogue. Students will develop an analytical vocabulary that enables them to read, interpret, and evaluate the work of other fiction writers. A major portion of this class will be given over to workshop sessions during which students share and evaluate each other's work. As a workshop, this course can be taken twice for credit.

MAWR 01559: Core II: Research Methods for Writers 3 s.h.
Prerequisite: MAWR 01554
Core II surveys non-quantitative research methods writers use. This class examines techniques of print and on-line research, interviewing, and case studies to develop the ability to weigh and assess the reliability and relevance of information. Students will learn to identify and present problems in writing using different perspectives and learn how these research styles guide a writer's interpretation of information. The course prepares students to develop their own descriptive research projects.

MAWR 01560: Managerial Communication 3 s.h.
Managerial Communication introduces students to the theoretical and practical insights of corporate communication. The course helps students develop leadership communication skills and is designed to improve communication skills for managers, information workers, and other professional writers. Students will learn about rhetorical theories and rhetorical strategies for responding to communication situations, current forms of corporate communication, effects of technology and globalization on corporate communication, and guidelines for ethical communication. Students will prepare a variety of professional quality documents in response to real world, case-based assignments.

MAWR 01561: Seminar I 3 s.h.
Prerequisites: MAWR 01554 and MAWR 01559
In Seminar I students will demonstrate what they have learned in the MA in Writing program by proposing and completing the initial stages of a major project in a genre of their choosing. This project, which will be completed in Seminar II, may have a creative emphasis (fiction, poetry, creative nonfiction) or a scholarly or research-based emphasis. Working with peers, under the mentorship of two faculty readers, students will develop their skills in writing, project management, and the personal and professional strategies necessary to sustain a writerly life.

MAWR 01564: Information Architecture 3 s.h.
Information Architecture explores the connections among web site usability, interactivity, design, and navigation principles as each relate to the written content. Students investigate how written content influences the look and user-friendliness of web sites. Specific issues addressed in the course include presenting content for audiences with disabilities or for non-English speakers; privacy and security concerns; and the rise of information anxiety in the general public.

MAWR 01565: Technical Writing 3 s.h.
Technical Writing introduces students to the rhetorical, ethical, and professional issues associated with technical communication. It focuses on the rhetorical principles behind standard formats and styles of technical documents. It explores topics such as, document design; ethics (including issues of product liability); editing, style, and mechanical correctness; the role of technology; and the impact of the global marketplace.

MAWR 01566: Editing the Literary Journal 3 s.h.
This course provides hands-on experience with the editorial and managerial processes involved in publishing Glassworks, a literary journal in print and electronic formats. Students will study both successful and struggling journals and basic reference guides to determine criteria for success. Working with the instructor and various section editors, students will solicit, evaluate, and select submissions, communicate with contributors about editorial decisions, determine the layout and design of the journal, and distribute the journal. They will also evaluate and produce editorial content in various genres, including book reviews, author interviews, and opinion editorials, for potential publication in the magazine.

MAWR 01567: Professions in Publishing 3 s.h.
In this Master's level course, students will be introduced to the vast and complicated world of publishing, and will acquire a basic understanding of the different roles, terms, and current issues within the industry, especially as it pertains to trade industry publishing. Students will explore the variety of publishing structures in the industry today, emphasizing developmental editing and the role of the acquisitions editor. Students will also learn about marketing, production, sales, agenting, contract negotiation, and the process of developmentally editing manuscripts. Through working hands-on with materials and speaking with industry professionals, students will leave the course empowered to engage in the publishing industry and what such work will entail.

MAWR 01570: Experimenting with the Major Work-in-Progress 3 s.h.
Prerequisite: MAWR 01559 or Permission of the Instructor
When writers come up with an idea for a book or a major creative project, they often need to go through a period of incubation, testing, experimentation, and play. What style or voice will give energy to the story? What structure should it have? How will the narration be paced? What events will frame the book? The purpose and method of this class will be to encourage experimentation as students work to answer these questions. Student may advance their ideas for the MA in Writing project for Seminar I and II or create a new project. Students will explore theories of creativity, bricolage, process, genre, leitmotif, pattern recognition, and narrative design, using the familiar elements of craft (setting, character, narration, etc.) with emphasis upon advanced strategies represented by model texts.

MAWR 01571: Seminar II 3 s.h.
Prerequisite: MAWR 01561
In Seminar II students will complete the Master's Project they began in Seminar I. In this process, they will continue to work with faculty readers and their peers to refine their writing, apply the advice given, and develop strategies for self-editing. As they continue to apply strategies of project management and the personal and professional strategies necessary to sustain a writerly life, students will reflect on their work through regular presentations, which will culminate in the public presentation of their work in the yearly MA in Writing Symposium.

MAWR 01575: Practicum in Teaching Composition 3 s.h.
The Practicum in Teaching Composition supports first-time graduate instructors in the Teaching Experience Program by introducing foundational concepts in Writing Studies and select theories in Composition/Rhetoric, and by exploring and modeling best pedagogical practices. The Practicum in Teaching Composition (MAWR 01575) develops a community of instructors through seminar-style discussions, collaborative projects, and reciprocal classroom observations. Assignments directly relate to students' professionalization as instructors and members of the field of Writing Studies. Students develop reflective teaching practices that prepare them to teach subsequent composition courses.

MAWR 01615: Independent Study 3 s.h.

MAWR 01618: Special Topics 3 to 6 s.h.
This course has a changing focus that permits faculty to offer specialized seminars focusing on current trends in the field, areas of faculty creative work and scholarship, or student requests. Students may take this course for credit more than once, provided the subtitle is different. This course may not be offered annually.

MAWR 01620: Internet and Writing Studies 3 s.h.
This is a theory driven seminar course with a practical component wherein students will learn HTML, CSS, and how to compose web sites according to the latest theories on web design. Students will read scholarly texts that introduce them to the evolution of written communication and writing technologies, Internet studies, and hypertext theory. Students will use these texts and theories to both analyze and compose various web sites, including an online portfolio of work they would like to showcase for future employers or graduate schools.

MAWR 01621: Visual Rhetoric and Multimodal Composition 3 s.h.
This is a theory driven seminar course with a pracitcal component. Students will read scholarly texts that introduce them to theories on multimodality, semiotics, visual rhetoric, copyright, and remix. Students will use these theories to both analyze and compose visual texts using multiple modes of communication.

MAWR 01622: Publishing for Creative Writers 3 s.h.
In this course, students aspiring to become published authors will explore many facets of literary publishing, from submitting work to agents and editors to editing a manuscript in production and marketing a completed book. Students will examine the many complex processes by which a literary manuscript (novel, story collection, memoir, etc.) becomes a book. Students will learn how to submit creative work to literary magazines, to agents, and to publishers. They will submit at least one completed work (an essay, a story, or a poem) to an appropriate journal or magazine. They will write a query letter and a synopsis for one of their own book-length projects and develop a marketing plan for the projected work. They will learn the most common reasons that writing is rejected and how to avoid them. They will learn about the varied roles of agents and editors from the editorial process through the design, production and promotion of the book. They will learn about the importance of applying for grants and fellowships, of submitting to literary competitions, and of "networking" in the development of a writing career. Students with completed or nearly completed books may use their own manuscripts for all of the above assignments.

MAWR 01623: Writing Stories for Children And Young Adults 3 s.h.
Students in this course will study the rich variety of fiction and nonfiction narrative published for audiences ranging in age from juvenile to young adult. Students will learn to recognize the elements of a good story for children, to evaluate children's literature based on a knowledge of these elements, and to write stories for this audience. Students will read outstanding examples in the genre and write their own stories, working methodically from story idea through revision to completed manuscript. (Students may choose to write fiction or nonfiction and may focus on short or long form narrative.) Students will critique each other's stories in workshop sessions. Students will also study the contemporary scene in children's publishing and will learn how to submit their stories to magazine and book publishers. As a workshop, this course can be taken twice for credit.

MAWR 01630: Writing Difference 3 s.h.
This course contrasts writing in academic genres against a variety of other forms, such as personal, imaginative, and popular writing. Students examine perspectives on language difference from sociolinguistic, literacy, feminist and composition studies perspectives, and produce writing in hybrid, multigenre or mixed-genre styles.

MAWR 02505: Poetry Workshop 3 s.h.
This class will provide a forum for students to explore the strategies poets use in creative expression. The students will develop an analytical vocabulary that allows them to read, interpret, and evaluate the work of other poets. A major portion of the class will be given over to workshop sessions, where students can share and evaluate each other's work. Students will also become familiar with a body of published poetry that illustrates techniques of expression, especially those that can be applied, not only to poetry, but to other genres of creative writing. As a workshop, this course can be taken twice for credit.

MAWR 02515: Creative Nonfiction Workshop 3 s.h.
Teaching students the form, structure and techniques of creative nonfiction, this workshop-style course addresses the issues of style, point of view, narrative and dramatic coherence as it applies to personal essay, the treatment of memory data, the use of detail in scene-setting and the connection between fictional and poetic strategies in nonfiction writing. In addition to their own work, students read and analyze contemporary creative nonfiction and classics in the genre; these texts serve as models for students to help them locate themselves within the large framework of creative nonfiction. Students will write several major pieces of varying lengths and types. As a workshop, this course can be taken twice for credit.

MAWR 02520: Writing the Novel 3 s.h.
Writing the Novel teaches students the structure, technique, and apparatus of the literary novel, and provides feedback and guidance through extensive instructor critique and workshop-style evaluation. It is recommended that students enrolling in this course have some prior practice in literary novel-writing or at least a strong background in reading the literary novel. Students are required to submit four consecutive novel chapters with synopsis by the end of the course.

MAWR 02521: Writing and Publishing the Nonfiction Book 3 s.h.
Writing and Publishing the Nonfiction book is about the culture and commerce of publishing, as well as the process of writing a nonfiction book. Students finish a proposal for a nonfiction book by the end of this semester and submit it to a commercial publisher. They receive guidance and criticism from the instructor throughout the entire process, submitting and re-submitting the proposals and sample chapters several times during the semester. In addition, students analyze book markets, prepare detailed proposals for their book idea, and present their idea to a mock editiorial board making decisions about the publishing promise of the book. During lecture, students develop a clear understanding of the symbiotic relationships among ideas, authors, agents, publishers, and the buying public.

MAWR 02522: Nonfiction Workshop 3 s.h.
The Nonfiction Workshop provides an in-depth examination of nonfiction genres, including news reporting, features, opinion, immersion journalism, biography, criticism, and social commentary and analysis. Lectures cover the methods, techniques, and ethics of nonfiction. Various nonfiction markets and market requirements are discussed. Students read model selections in various nonfiction genres and experiment with writing their own similar selections, which are discussed and critiqued. Students complete substantial published articles and/or book selections in their chosen nonfiction genres. As a workshop, this course can be taken twice for credit.

MAWR 02523: Writing the Memoir 3 s.h.
Students receive in-depth instruction in writing the memoir, one of the most engaging and popular literary forms today. Students will read widely from selected memoirs, write three short memoirs that may stand alone or be interrelated, and experience the workshop method of critiquing manuscripts. Students will focus on characterization, conflict, point-of-view, and other literary elements traditionally associated with the narrative form as they develop their memoirs.

MAWR 02524: Writing the Graphic Novel: Theory and Practice 3 s.h.
This course explores the graphic novel genre and its incarnations through readings, writings, and discussion. An original script for a graphic short story or beginning of a novel will be developed in a series of assignments, and discussed and critiqued in a workshop environment. This course may not be offered annually.

MAWR 02525: Writing Genre Fiction 3 s.h.
Whether it involves walking through the woods speaking Elvish, visiting a distant planet, solving a crime, or staying the night in a haunted house, genre writing captures audiences and transports them into the land of "what if." In this class, students will write long or short fiction in the genres of mystery, horror, fantasy, and sci-fi, exploring the conventions and tropes each genre employs. Students will also study the ways in which published authors have used these genres to dig into the human experience, and they will learn about the thriving publishing industry business that promotes these genres.

MAWR 03520: Master of Arts in Writing Internship .5 to 3 s.h.
Prerequisite(s): Approval of Graduate Advisor
Under professional supervision in the field, students put into practice theories and skills learned in the classroom. Students' primary duties invlolve writing, though types and modes of writing (including electronic modes) may vary. Internship experience totals 120 hours of work. Students maintain a detailed log of working hours, prepare a portfolio of work completed in the internship, write an analysis of the internship experience and are evaluated by their site supervisor.

MAWR 07500: The Essay: Art and Craft 3 s.h.
This course introduces students to the essay as genre, its evolution, and current status. Emphasis is on esthetics, craft, and technique. Students will engage in both analysis and essay writing as means toward achieving a theoretical understanding of the form.

WA 01200: Introduction to Writing Arts 3 s.h.
Prerequisites: COMP 01111 and COMP 01112
Introduction to Writing Arts familiarizes students with the disciplinary underpinnings of Writing Arts, providing a background in the history of writing, current writing theories, writing as technology, and the writing professions. The course covers these issues within the context of the Writing Arts major, enabling students to situate themselves in a community of writers and language professionals and preparing them for upper-level cousework.

WA 01201: How Writers Read 3 s.h.
Prerequisites: COMP 01112
This sophomore-level course introduces students to theoretical methods of reading complex and sophisticated texts. Students will study theories of reading and writing that concern structure, register, genre, intertextuality, and rhetorical concerns. The course presents these theories and correlative methods through readings, and students then practice applying these methods during class discussions and in writing using a series of self-selected texts as the objects of study.

WA 01300: The Writer's Mind - WI 3 s.h.
Prerequisite(s): COMP 01112 and 45 credits earned
The Writer's Mind increases students' understanding of themselves as writers by learning craft-specific approaches to writing, and by developing critical awareness of their own and others' writing. Working in different genres of writing, students will gain experience in effective revision strategies, in analyzing audience, and in visual aspects of the printed or electronic page.

WA 01301: Writing, Research & Technology 3 s.h.
Prerequisite(s): WA 01200 with concurrent enrollment allowed, COMP 01112, and 60 credits earned
This course presents the rhetorical, social, and practical dimensions of writing and researching in networked contexts. Students analyze and compose with audio, video, image and text, using a variety of digital writing practices. Students blend research methods informed by current literacy theories and modalities, allowing them to explore meaning-making, circulation, and the ethical ramifications of writing within digital communities.

WA 01302: Introduction to Technical Writing - WI 3 s.h.
Prerequisite(s): COMP 01112 or HONR 01112 or ENGR 01201 and 45 credits earned
This course introduces students to both the field of technical writing and the uses of technical writing within a variety of professions. Students will learn how technical writers use document design strategies based on rhetorical principles to respond to communication challenges. Through practice with a variety of genres, students will gain experience with audience analysis, communication ethics, research, collaboration, professional style, and editing. The course culminates in a writing project based on a professional, academic, or community issue of the student's choosing. Students are encouraged, and will be assisted, in designing projects that reflect their professional interests.

WA 01304: Writing Creative Nonfiction-WI 3 s.h.
Prerequisite(s): COMP 01112 and WA 07290
Addressing craft and ethical concerns, this course introduces students to creative nonfiction. In the study of this "fourth genre" of creative writing, focus is on those elements, e.g., imagery, characterization, diction, that make nonfiction creative. Students will write in a number of subgenres, such as memoir, literacy journalism, and the personal essay, and will be exposed to a variety of narrative structures. They will also read and analyze representative professional writing to provide contexts for their own work, which will be critiqued by both the instructor and their peers. Special attention will be paid to the evolution of the student writer's personal voice.

WA 01315: Writing with Technologies 3 s.h.
Prerequisite(s): COMP 01112 and 60 earned credits
Writing with Technologies provides students with a theoretical basis for understanding the ways technologies - past, present, and future - shape the collaborative construction of meaning inside and outside the classroom. Students are encouraged to expand their repertoire of technologies and conduct research on contemporary writing practices to increase critical awareness of the affordances and constraints writing technologies make available to them as future educators.

WA 01322: Writing for the Workplace-WI 3 s.h.
Prerequisite(s): COMP 01112 and 45 credits earned
This course introduces students to writing activities common to most careers. Assignments may include resumes and cover letters, field and progress reports, and proposals. Students can also expect to deliver brief oral presentations.

WA 01326: Writing for Nonprofits-WI 3 s.h.
Prerequisite(s): COMP 01112 and 60 credits
This course is a junior level course that addresses the special technical and professional writing skills required for work in the nonprofit sector. Students will develop a broad understanding of the unique communication challenges faced by nonprofit organizations as they research and analyze the writing of various nonprofits and as they write in authentic situations. This course explores how nonprofits communicate with their many audiences, and students will compose writing typical of nonprofit organizations, including press releases and other public relations material, fundraising communications, reports, and grant proposals. Students may also have the opportunity to engage in service learning by working with and for a local area nonprofit.

WA 01350: Rhetorics of Style-WI 3 s.h.
Prerequisite: COMP 01112
This course introduces students to the theory and practice of writing with stylistic devices and strategies. Through studying, analyzing, experimenting, and writing with a range of stylistic devices, students will develop a practical understanding of how to put figural language to use for persuasive, expository, and aesthetic ends, as well as develop an appreciation for the ethical implications of stylistic choices.

WA 01358: Teaching the Writer's Workshop-WI 3 s.h.
Prerequisite(s): COMP 01112 or HONR 01112
In this course, students will explore current theories of the Writer's Workshop, and will develop the skills and knowledge necessary to facilitate a successful Writer's Workshop within early childhood, elementary, and middle school settings.

WA 01370: Professions in Writing Arts: Post-Graduate Options 1 s.h.
Prerequisite(s): WA 01200 and 30 credits earned
Professions in Writing Arts: Post-Graduate Options introduces students to the various and wide-ranging opportunities available to writing arts students by exploring career, graduate school and other professional options in the field of writing. Class topics may include statements of purpose and letters of application; internships, field experience, and volunteerism; and publishing opportunities. Professionalism and entrepreneurial approaches to job seeking are also emphasized. Discussions and workshops are supplemented by guest speakers and readings.

WA 01408: Writing as Managers 3 s.h.
Prerequisite: COMP 01112 or HONR 01112 or ENGR 01102
This course provides Management students with extensive practice in preparing the written materials required by common management activities. Assignments include preparing the written materials required for OSHA compliance, in disciplinary situations, in alleged sexual harassment situations, and customer service. Other specific topical assignments will be developed to respond to changes in the education needed by Management students.

WA 01415: Situating Writing 3 s.h.
Prerequisite(s): COMP 01112 and 75 credits earned
Situating Writing provides students with the theoretical and practical tools they will need to work with young writers by introducing methods of teaching and evaluating writing that are explicitly writer-centered. Students will develop their own understandings of the process while learning how to respond to writing in ways that are situation-specific. Students will also improve their own writing by collaborating with other writers, giving and receiving feedback on work in progress, and using a range of technologies that facilitate feedback and revision.

WA 01450: Writing Arts Portfolio Seminar 1 s.h.
Prerequisite(s): WA 01300 and WA 01301 and WA 01445
Seniors majoring in Writing Arts will have an opportunity to reflect on the work undertaken as part of the writing arts major. The course asks students to construct and submit a portfolio consisting of work products both from those courses included in the core and from a selection of courses in the required elective clusters. A written reflection on the intellectual and learning experience derived from these courses as evidenced by the items included comprises the written requirement for this course.

WA 07290: Creative Writing I 3 s.h.
Prerequisite: COMP 01111 or COMP 01105
This course concentrates on developing students' skills in writing various kinds of poems and in developing fiction techniques. In addition to exploring different poetic forms, students learn how to create characters, establish conflict, and develop a plot while writing a short story. Students examine the work of professional poets and fiction writers.

WA 07291: Creative Writing II 3 s.h.
Prerequisite: WA 07290 or CRWR 07290
Building upon the foundations learned in Creative Writing I, students in Creative Writing II will engage in more specific practice in the conventions of short story writing, creative nonfiction and poetry. Students will have directed assignments encouraging experimentation in multiple genres but will prepare a final portfolio that may give more emphasis to a genre of their choice. Special emphasis will be placed on reading examples of these conventions and learning how writers graft or borrow techniques (dialogue, dramatic monologue, voice, description) from one genre to apply it in another.

WA 07309: Writing Children's Stories 3 s.h.
Prerequisite: 30 credits earned
This course focuses on fiction written for juveniles and young adults. Students examine the rich variety of literature published for young people. They do exercises, write complete stories, critique each other's writing in workshops and meet with the teacher for individual conferences on their work. They also learn how to submit manuscripts to magazine and book publishers.

WA 07391: Writing Fiction 3 s.h.
Prerequisite(s): WA 07290 or WA 07291 or CRWR 07290 or CRWR 07291
This class will provide a forum for students to explore the strategies fiction writers use in creative expression, especially in writing the short story. Students will develop an analytical vocabulary that allows them to read, interpret, and evaluate the work of other fiction writers. A major portion of the class will be given over to workshop sessions, where students can share and evaluate each other's work. Students will also become familiar with a body of published short stories that illustrate techniques of expression such as setting, point of view, characterization, dialogue, and other elements of fiction.

WA 07392: Fundamentals of Playwriting 3 s.h.
This course covers the methods of developing and writing a play. During the course, students analyze plays, and outline and work on the draft of a full-length play. This course may not be offered annually.

WA 07395: Writing Poetry 3 s.h.
Prerequisite: WA 07290 or CRWR 07290
This class will provide a forum for students to explore the strategies poets use in creative expression. The students will develop an analytical vocabulary that allows them to read, interpret, and evaluate the work of other poets. A major portion of the class will be given over to workshop sessions, where students can share and evaluate each other's work. Students will also become familiar with a body of published poetry that illustrates techniques of expression such as imagery, metaphor, voice, tone, the music and strategy of the line, and other elements of poetry.

Organization of the University

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Richard Dammers	Dean, College of Performing Arts
Sue Lehrman	Dean, William G. Rohrer College of Business

Vojislava Pophristic	Dean, College of Science & Mathematics
Kenneth Lacovara	Dean, School of Earth and Environment
Peter Rattigan	Dean, Virtua Health School of Nursing & Health Professions
Lee Talley	Dean, John H. Martinson Honors College
Annette Reboli	Dean, Cooper Medical School of Rowan University
Thomas A. Cavalieri	Senior Vice Provost and Chief Academic Officer, Virtua Health College of Medicine and Life Sciences of Rowan University
Matthew Edson	Founding Dean, Rowan School of Veterinary Medicine
Carl E. Hock	Senior Associate Dean, Graduate School of Biomedical Sciences

Executive Administration

Abruzzo-Klumpp, Dorothy — Associate Director, University Advising Services
B.A., M.A. Rowan University

Accardo, Amy — Director, Center for Neurodiversity
M.S. Drexel University, EdD Arcadia University

Ali, Aymen — Manager of CREATE's

Alkanat, Gokhan — Associate Provost for International Education
Ph.D., Auburn University; M.Ed., Troy University

Alverio, Melanie — Assistant Director of Marketing, Member Services and Business Operations
B.S., M.B.A., Rowan University

Ammar, Nawal — Dean, College of Humanities and Social Sciences
B.Sc., M.Sc. University of Salford, Greater Manchester University; Ph.D. University of Florida

Awenowicz, Melissa — Assistant Dean, Accreditation and Assessment, College of Education
B.A., Indiana University of Pennsylvania; MAT, Ph.D., University of Pittsburgh

Basehore, Pamela — Associate Dean for Assessment (RowanSOM)
Ed.D., MPH University of Medicine and Dentistry of New Jersey (UMDNJ)-Robert Wood Johnson Medical School

Beswick, Christine — Director of Planning, Program Development and Special Projects (RowanSOM)
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General Information

Campus Buildings

113 Laurel Road - Stratford Campus

Located across Laurel Road from the main part of campus, 113 Laurel Road houses the Admissions and Student Financial Aid offices

301 High Street

The three story building is home to the Rowan University Art Gallery and is home to several academic offices and classrooms.

6 High Street

The former bank building is now home to the administrative offices of the College of Communication and Creative Arts.

Academic Center - Stratford Campus

Ground floor includes Top Docs Café, University Library, Auditorium and Multi-Purpose Room. Student Lounge, classrooms, conference rooms and Academic Affairs offices. The third floor includes the Dean's offices, classrooms and Anatomy Lab

Barnes & Nobles at Rowan University

Located on Rowan Boulevard, this now serves as the University Bookstore.

Bole Annex

Opened in the spring of 1970, Bole Annex houses the Department of Public Safety.

Bole Hall

Robert D. Bole Hall is the administrative center of the University. It contains the offices of the President, Provost, University finances, and The Office of General Counsel. It is named after former Dean Robert Bole.

Bozorth Hall

Named for a former registrar, Loriot Bozorth, the building was originally opened in 1954 as the campus demonstration elementary school. Today, Bozorth houses the College of Communication offices, Rowan Radio, Rowan TV, a distance learning classroom, film-editing facilities, a computer-equipped journalism newsroom, an advertising/PR client suite, a layout room and a computer-equipped writing laboratory.

Bunce Hall

The first building on campus, Edgar J. Bunce Hall was opened in 1923 and is named for a former president of the University. It is home to the departments of English, Foreign Languages and Literatures, Philosophy and Religion, and Theatre and Dance. This building also features classroom space and Tohill Auditorium.

Business Hall

Opened in 2017, Business Hall is on Rt. 322 and is home to nearly 2,000 business majors.

CREATEs

Opened in 2017, the Center for Research and Education in Advanced Transportation Engineering Systems is located at the South Jersey Technology Park.

Camden Academic Building

The Camden campus is located in the historic First National Bank and Trust Company building and annex, on the corner of Cooper and Broadway, and serves as the heart of Rowan University's Camden campus. The Camden campus provides an array of services for students, faculty, and staff.

Campbell Library

Opened in 1995, the Keith and Shirley Campbell Library features 118,000-square feet of research, study, archive and office space. It provides connectivity to the campus network, enabling access to many databases and online resources. The Library was named the Keith and Shirley Campbell Library in recognition of the Campbells' generous gift of an endowment for the facility in 2000. The Departments of Sociology and Anthropology and the Department of Law and Justice are housed on the 5th floor.

Carriage House
Built in 1849 to service the Hollybush Mansion, this building now houses University Publications.

Cassady Maintenance Building
Opened in 1971, the Otto P. Cassady Maintenance Building, named for a former engineer in charge of maintenance, is the main office complex for maintenance operations.

Chamberlain Student Center
The Student Center opened in 1974 and serves as a campus focal point where students, faculty, staff and community members congregate for a wide range of events, services and functions. It houses offices for student organizations and publications as well as several administrative offices. The following facilities are located in the three-level center: the information desk, I.D. room, mailroom, an ATM machine, Eynon Ballroom, meeting and conference rooms and eating areas, including the dining hall, a food court, snack bar, outdoor dining terrace, Profs Place and the Owl's Nest Restaurant.

Cooper Medical School of Rowan University
The six story building, located in Camden, is home to Rowan's M.D. granting medical School.

Discovery Hall
Open 2021, Home to Earth and the Environment and university labs

Edgewood Park Apartments
This four-building complex houses 24 apartments. Four students live in each apartment, which contains two bedrooms, a living room, dining room, kitchen and bathroom.

Engineering Hall
Opened in 2017, it sits next to the Henry M. Rowan Hall, home of the College of Engineering.

Enterprise Center
Located on Rowan Boulevard, the Enterprise Center opened in 2013 and is home to the College of Graduate and Continuing Education.

Esby Gym
The Roland A. Esbjornsen Hall houses the gymnasium, swimming pool, classrooms and the Health and Exercise Science faculty offices. The building is named after a former chairman of the Health and Exercise Science Department.

Evergreen Hall
Evergreen houses 204 students. The building is three stories tall and is separated into two wings. Rooms are arranged in suites. Each suite contains two double bedrooms and a bath.

Girard Ave. Facilities & Operations Facility
Houses Facilities & Operations

Hawthorn Hall
Formerly a student residence facility, Hawthorn Hall is one of the homes of the College of Communication.

Hering Central Heating and Cooling Plant
The J. Leonard Hering Heating Plant, named for a former superintendent of maintenance, houses the centralized heating and cogeneration equipment.

Herman D. James Hall
Herman D. James Hall, opened January 2006, is home to the College of Education. The three-story, 135,000-sq. foot building features academic distance-learning facilities, an early childhood development center and an assortment of labs and outreach centers as well as classroom space.

Holly Pointe Commons
Opened in 2017, HPC is a 1,400 bed residence hall built with private funds.

Hollybush Mansion
Built in 1849, the building was the site of the historic summit meeting between President Lyndon B. Johnson and Soviet Premier Alexei B. Kosygin in 1967. The building now serves as a museum and meeting center.

Laurel and Oak Halls
Laurel and Oak were the University's first residence halls. They have had multiple uses throughout the years. They are now home to a variety of administrative offices.

Memorial Hall
Opened in 1956, the building serves as the center for information (computer) resources, housing the campus help desk, Web Services and the Duplicating Center. A dance studio is also in the building.

Mimosa Hall
Mimosa accommodates 305 students. Rooms are arranged by suites, and each suite contains two to three double bedrooms and a bath.

Mullica Hall
Mullica accommodates 103 students. Rooms are arranged by suites, and each suite contains two double bedrooms and a bath.

Robinson Hall
Named after Thomas E. Robinson, a former Rowan University president, this is one of the largest classroom buildings on campus. It is home to several departments of the College of Liberal Arts & Sciences. The core of the building consists of classrooms and seminar rooms.

Rowan Boulevard Apartments
Rowan Boulevard Apartments, is made up of two, four-story buildings that house 884 students in 28 one-bedroom efficiency units and 214 four-bedroom suites. The suites include two bathrooms, a kitchen, breakfast nook and living room area. The complex also contains exercise and weight rooms, meeting rooms, laundry facilities and a Public Safety satellite office.

Rowan Hall
Opened in January 1998, Henry M. Rowan Hall is the home of the College of Engineering. The 95,000-sq. foot building features three floors of offices, classrooms, labs and the 115-seat Betty Rowan Auditorium.

Rowan Medicine Building (Sewell)
Open 2021

Rowan Medicine Building - Stratford Campus
Primarily a clinical office building, the RMB includes CARES Institute, NJISA, NMI, Family Medicine, Pediatrics, Internal Medicine and Ob/Gyn clinical offices. Lab Corp and a retail pharmacy are on the first floor. The second floor includes the Simulation Lab and the GSBS administrative offices. The third floor includes Employee/Student Wellness and Masterson OMM lab.

Sangree Greenhouse
Built in 1923, the John Sangree Greenhouse is one of the oldest structures on campus. A preservation and renovation project was completed on this facility in 1998.

Savitz Hall
Originally the University library, this building was completely renovated to house all of the student service functions, including the offices of the vice president for Student Affairs, Dean of Students, Career and Academic Planning, Developmental Education, Tutoring, Basic Skills/Testing, Admissions, Counseling, EOF/MAP, Registrar, Financial Aid, Revenue and Collections, Residential Learning & University Housing, Multicultural/International Affairs, Specialized Services, the Center for Service Learning and Volunteerism, the Honors Program and Women's Studies. The building is named after Jerohn Savitz, the University's first president.

Science Center - Stratford Campus
Three story building that houses research laboratories, GSBS classroom and meeting rooms, and the vivarium

Science Hall
Dedicated in 2003, the facility features the 102-seat Edelman Planetarium, a rooftop observatory with 16-inch telescope, a rooftop greenhouse, 27 teaching laboratories and 22 research labs. Its 150,000 square feet of space is spread over three floors. Housed here are offices for the departments of Biology, Chemistry and Biochemistry, and Physics and Astronomy.

Sewell Street Facilities & Operations Facility
Houses Facilities and Operations

Shpeen Hall
Alvin Shpeen Hall is located one block off of the east corner of campus, on Academy Street. The University purchased the former elementary school building from Glassboro and refurbished it to house offices. Today, Shpeen Hall is home to the R. Grace Bagg Alumni Center and the Rowan Foundation. Alvin Shpeen was a mayor of Glassboro. It is home to University Advancement, including Alumni Relations.

South Jersey Technology Park at Rowan University
The Samuel H. Jones Innovation Center is a 45,000 square-foot facility located at the South Jersey Technology Park on Rowan's West campus that provides engineering laboratory, web-laboratory and technology company incubation all within a single facility. In partnership with Rowan's College of Business, the Technology Park offers collaboration and consulting services, product feasibility, development and commercialization services, training seminars and continuing education courses in entrepreneurship for new and established businesses.

Stratford Campus
Home to Rowan's D.O. granting medical school.

Student Recreation Center
"Opened in 1993, the Student Recreation Center is a comprehensive recreation sports facility. The three-story, 76,000-square-foot building houses an eight-lane swimming pool, a three-lane indoor running track, a three-court multi-sport gym, five racquetball courts, an aerobics room, fitness and free-weight rooms, a conference room and complete locker/shower room facilities. Administrative offices coordinate various programs, including informal sports, intramural sports and fitness activities for students, faculty and staff. "

Team House
Opened in 1971, the Team House contains locker rooms; training facilities; and intercollegiate athletics, coaching and staff offices. It was renovated and expanded in 2013.

The North Halls: Chestnut, Magnolia and Willow Halls
These buildings house 750 students. Students live in suites and share restroom facilities.

Townhouses
Opened in 2004, the on-campus, 113-unit townhouse complex along Route 322 features four- and six-bedroom configurations convenient to classes and other activities. The complex was built adjacent to a new parking garage and 5,000-square-foot community center with laundry facilities, a game room and meeting space.

Triad Apartments
Triad features 81 apartments which are carpeted, air-cooled and furnished. A variety of apartment types are available to accommodate 288 students in a co-ed living environment.

University Educational Center - Stratford Campus
One of the original campus buildings, it includes Public Safety, Human Resources and Facilities on the first floor. The second floor includes Student Affairs offices and Problem Based Learning rooms

Victoria Hall
Located near Rowan Boulevard, Victoria Hall is home to College of Communication and Creative Arts programs.

Wellness Center
Seymour Winans Hall is named for a former faculty member. It is now home to Counseling & Psychological Services and the Wellness Center, formerly the Student Health Center.

Westby Hall
Completed in 1967, the Cleve O. Westby Hall Arts Building, named in honor of the former director of county and state college construction, contains art studios for ceramics, sculpture, jewelry/metals, painting, printmaking and photography, computer labs, classrooms, a lecture hall for 110 students, exhibition galleries, and faculty offices.

Whitney Center
Located on Rowan Boulevard, the Whitney Center (opened 2012) features stores on the 1st floor and student housing on top. It is also home to the Thomas Bantivoglia Honors Program and student apartments.

Wilson Hall
Harold Wilson Hall, named after a former faculty member, opened in 1972 and is primarily home to the performing arts. The building contains two large rehearsal rooms, Boyd Recital Hall, practice rooms, classrooms, two student lounges, a music library, faculty offices, the concert box office and W. Clarke Pfleeger Hall—a 1,000 seat auditorium. The dean of the College of Fine & Performing Arts, and Music Department are also located in the building.

General Information

Administrative Offices Telephone Numbers

Academic Success Center	856.256.4259
Admissions (Undergraduate)	856.256.4200
Admissions - Graduate (Rowan Global)	856.256.4747
Alumni Engagement	856.256.5400
ASCEND (formerly EOF/MAP)	856.256.4080
Bursar	856.256.4150
Camden Campus	856.361.2900
Campbell Library	856.256.4800
Campus Activities	856.256.4696
Community Standards	856.256.4242
Conference and Event Services	856.256.5446
Counseling & Psychological Services	856.256.4333
Dean, Business	856.256.4025
Dean, Communication & Creative Arts	856.256.4340
Dean, Earth & Environment	856.256.5244
Dean, Education	856.256.4750
Dean, Engineering	856.256.5300
Dean, Humanities & Social Sciences	856.256.5840
Dean, Nursing & Health Professions	856.256.4785
Dean, Performing Arts	856.256.4552
Dean, Science & Mathematics	856.256.4850
Dean of Students	856.256.4283
Financial Aid	856.256.4250
Information Resources & Technology	856.256.4401
Main Switchboard	856.256.4000
Military Services	856.256.4233
Multicultural Center	856.256.4448
Office of Academic Affairs	856.256.4011
Office of Accessibility Resources	856.256.4234
Office of Career Advancement (OCA)	856.256.4456
Office of Pre-Health Programs	856.256.4787
Office of Social Justice, Inclusion and Conflict Resolution	856.256.5495
Owl's Nest	856.256.4932
President	856.256.4100
Provost	856.256.4108
Public Safety (emergency)	856.256.4911
Public Safety (non-emergency)	856.256.4922
Recreation Center (Main Office)	856.256.4900
Registrar	856.256.4350
Residential Learning & University Housing	856.256.4266
Rowan Global Student Services	856.256.5435
Student Center	856.256.4601
SVP Finance & CFO	856.256.4125
Testing Services	856.256.4263
Tutoring Services	856.256.4460
Volunteerism, Community Engagement & Commuter Services	856.256.4595
VP University Advancement	856.256.4159
VP University Relations	856.256.4129
Wellness Center **Main Number** (formerly Student Health Center)	856.256.4333

Directions to Campus

Directions to Campuses

For GPS, use the street address for each of our campuses as indicated below

Main Campus - Glassboro
201 Mullica Hill Road, Glassboro, NJ 08028

Cooper Medical School of Rowan University (CMSRU)
401 South Broadway, Camden, NJ 08103

Rowan University @ Camden - Bank Building
129 North Broadway, Camden, NJ 08102

Rowan University School of Osteopathic Medicine (SOM)
One Medical Center Drive, Stratford, NJ 08084

West Campus - Tech Park
107 Gilbreth Parkway, Mullica Hill, NJ 08062

The Emeriti

Adams, Ethel M. (1968-1984) Professor
Psychology
B.A., Eastern Michigan University; M.A., University of Michigan; Ed.D., University of Pennsylvania

Addison, Carolyn (1967-1991) Professor
Health and Physical Education
B.S., James Madison University; M.A. New York University; Ed.D., Temple University

Adelson, Fred 1974-2022 Professor
Department of Art
B.A., Univ. of Massachusetts; M.A., M.Phil., Ph.D., Columbia University

Albone, Kenneth 1982-2022 Associate Professor
Department of Communication Studies
B.S., Lake Superior State College; M.A., Miami University; Ph.D., Bowling Green State

Alvino, Esther (1966-1987) Assistant Professor
Elementary Education
B.A., M.A., Glassboro State College

Ambacher, Jr., Richard J. (1967-2000) Professor
Communication Studies
B.A., Glassboro State College; M.F.A., Yale University

Amer, Khaled 1983-2014 Assistant Professor
Math and Computer Science
B.S., Cairo Univ.; M.S C., Concordia Univ.; M.S., Ph.D., University of Waterloo

Amme, Linda (1968-1990) Assistant Professor
Special Education Services and Instuction
B.A., M.A., Glassboro State College

Andersen, Donald (1970-1998) Assistant Professor
Special Education Services and Instruction
B.A., M.Ed., Rutgers University

Applebaum, David 1973-2011 Professor
Department of History
B.A., Brooklyn College; M.A., Ph.D., University of Wisconsin-Madison

Avril, Edwin (1959-1982) Professor
Music
B.A., San Francisco State College; M.A., Ed.D., Teachers College, Columbia University

Bao, Da-Hsien 1995-2015 Professor
Department of Accounting and Finance
B.S., Fu Jen Catholic University, M.B.A., PhD University of Southern California

Bartelt, Pearl W. (1972-1999) Professor
Department of Sociology and Anthropology and Dean
B.S., M.A., Ph.D., Ohio State University

Behm, Edward 1971-2002 Assistant Professor
Department of Geography, Planning & Sustainability
B.A., M.A., Bowling Green State University

Benevento, Jacqueline D. (1993-2010) Assistant Professor
Department of Teacher Education
B.A., Montclair State; M.A., Middlebury College; Ed.D., Temple University

Beverly, Leah (1958-1984) Professor
Health and Physical Education
B.S., Southwestern Louisiana College; M.A., N.Y.U.; Ed.D., University of So. Mississippi

Bianchi, John (1967-1990) Coordinator of Research
Education
B.S., Villanova Univ.; M.Ed., Rutgers Univ.; Ed.D., Temple University

Bisazza, Gaetano R. (1966-2000) Assistant Professor
Biological Sciences
B.S., LaSalle College; M.S. Villanova University

Blough, Robert (1963-1995) Professor
Elementary Education
B.S., Juniata College; M.Ed., Temple University; Ed.D., University of Pennsylvania

Bolay, Brenda (1968-1997) Associate Professor
Health and Exercise Science
B.A., University of Michigan; M.Ed., State University of New York, Buffalo; Ph.D., University of Maryland

Borgen, Evelyn (1965-1991) Professor
Elementary and Early Childhood Education
B.S., Monmouth College; M.A., Glassboro State College; Ed.D., Fairleigh Dickinson Univ.

Borowec, Alexander (1956-1988) Professor
Physical Sciences
B.S., Trenton State College; M.S., University of Pennsylvania; Ed.D., Temple University

Brent, George (1971-2003) Professor
Elementary/Early Childhood Education
B.A., Ed.M., Boston University; Ed.D., University of Massachusetts

Breslin, Frederick (1960-1991) Professor
Psychology
B.A., Queens College; M.A., Ph.D., New York University

Brooks, Ellain (1965-1983) Assistant Professor
Math and Computer Science
B.S., North Carolina State; M.A., Columbia University

Brown, Estelle (1962-1992) Professor
Reading and Speech Correction
B.S., M.A., Glassboro State College; Ed.D., Temple University

Bruce E. Caswell 1989 Associate Professor
Department of Political Science and Economics
B.A., University of Chicago; M.C.P., University of Pennsylvania; Ph.D., Rutgers University

Butcher, Ronald (1991-2009) Executive Director
Education Institute
B.S., Western Michigan University; M.A., Eastern Michigan University; Ph.D., University of Michigan

Buzash, Gabriel (1964-1981) Professor
Elementary Education
B.S., Slipper Rock State College; M.S., Westminster College; Ed.D. Penn State University

Byrd, Kimble (1984-2018) Professor
Department of Management and Entrepreneurship
A.B., Villanova University; J.D., University of Pennsylvania

Byrer, Josep (1968-1995) Assistant Professor
Technology
B.S., M.S., Indiana State University

Cahill, Janet (1979-2013) Professor
Psychology
B.S., State University of New York at Oneonta; Ph.D., Temple University

Caldwell, Janet (1983-2016) Professor
Department of Mathematics
B.A., Rice University; M.A., University of Pennsylvania; Ph.D., University of Pennsylvania

Calliari, Carl (1968-2004) Professor
Education
B.A., M.A., Glassboro State College; Ed.D., Temple University

Cammarota, Marie (1988-2008) Associate Professor
Special Education Services/Instruction
B.A., M.A., Glassboro State College; Ed.D., Nova Southeastern University

Capasso, Ronald (1996-2002) Associate Professor
B.A., M.A., Montclair State College; Ed.D., Columbia University

Cell, Howard R. (1967-2000) Professor
Department of Philosophy and World Religions
B.S., University of Wisconsin; M.A., San Jose University; Ph.D., Temple University

Chalpoupka, Edward 1972-2019 Professor
Health and Exercise Science
B.S. Queens College, MS Queens College, PhD, Ohio State University

Chandrupatla, Tirupathi 1995-2020 Professor
Department of Mechanical Engineering
B.E., Mechanical Engineerng, Osmania University, India, 1965; M. Tech. Design and Production, Indian Institute of Technology, Bombay, India, 1967; Ph.D., Engineeing Mechanics, University of Texas at Austin, 1997

Chang, Julia 1996 Associate Professor
Department of Writing Arts
B.A., Stonehill College; M.S.J., Columbia University; M.A., Temple University

Chard, Daniel 1968-2016 Professor
Department of Art
B.F.A., Univ. of South Dakota; M.A., Northern State College; Ed.D., Columbia University

Chaskes, Jay 1969 Professor
Department of Sociology and Anthropology
B.A., University of Toledo; M.A., Ph.D., Temple University

Chung, Shifei (1997-2019) Professor
Department of Accounting and Finance
B.S., National Taiwan University; M.S., University of Wisconsin-Madison; Ph.D., University of Memphis; CPA

Cimprich, Jack R. (1973-1998) Associate Professor
Computer Science
B.A., Boston College; M.S., University of Pennsylvania

Cinaglia, Marianne B. (1994-2007) Assistant Professor
Secondary Education
B.S., Drexel University; M.A., Ph.D., University of Delaware

Clapp, Robert A. (1969-2000) Assistant Professor
Theatre and Dance
B.A., Pennsylvania State University; M.A., Syracuse University

Clark, Carol (1977-2010) Librarian
Library
B.A., Regis College; M.S.L.S., Syracuse University; M.Ed., University of Lowell

Clowney, David (1988-2018) Professor
Department of Philosophy and World Religions
B.A., Calvin College; M.A., Wayne State University; M.Div., Westminster Theological Seminary; Ph.D., Temple University

Cohen, Stanley (1961-1984) Professor
Educational Administration
B.S., Rutgers University; M.Ed., Ed.D., Temple University

Collins, John (1963-1994) Professor
Communications
B.S., West Chester State College; M.A., Penn State University; Ed.D., Temple University

Collins, John J. (1969-1999) Professor
Educational Leadership
B.A., M.A., Glassboro State College; J.D., Rutgers University

Combs, Ethel (1967-1995) Associate Professor
Reading and Speech Correction
B.A., Douglass College; M.A., Glassboro State College; Ph.D., Temple University

Cone, Stephen L. (1999-2017) Professor
Health and Exercise Science
B.A., Jacksonville University; M.A., Appalachian State University; Ph.D., Texas A & M University

Conradi, Janet 2009-2022 Professor
Department of Art
B.A., M.A., Iowa State University

Covi, Adelyne (1964-1984) Assistant Professor
Elementary Education
B.S., Washington University; M.A., Glassboro State College

Craver, Rhys (1963-1994) Associate Professor
Chemistry and Physics
B.S., Millersville State College; M.S., University of Delaware; Ph.D., Walden University

Creamer, Marvin C. (1948-1977) Professor
Department of Geography, Planning & Sustainability
B.S., L.H.D., Glassboro State College; M.S., University of Pennsylvania; M.S., University of Wisconsin

Crichlow, Joel 2001-2014 Associate Professor
Computer Science
B.A., University of Guyana; M.Sc., Ph.D. University of the West Indies

Cuddy, Claudia 1998-2015 Assistant Professor
Department of Journalism
B.A., M.A., M.A., Glassboro State College

Czochor, Ronald 1983-2021 Professor
Department of Mathematics
B.S., Union College; M. of B.Ma., Ph.D., North Carolina State University

Darrah, Gladys L. (1967-1979) Assistant Professor
Health and Physical Education
B.S., M.S., University of Wisconsin

Dear, Edward C. (1969-2000) Associate Professor
Health and Exercise Science
B.S., Temple University; M.A., East Stroudsburg State College; D.A., Middle Tennessee State University

Delaney, Lawrence (1964-1988) Professor
Physical Sciences
B.S., Trenton State College; M.S., Ed.D., University of Pennsylvania

Detrick, Fred (1964-1987) Associate Professor
Foundations of Education
B.A., M.S., Rutgers University

DiObilda, Nicholas 1972-2012 Professor
Reading
B.S., West Chester University; M.Ed., Univ. of Delaware; Ph.D., Ohio State University

Donaghay, Robert (1963-1992) Assistant Professor and Coordinator
Academic Advising
B.S., University of Minnesota; Ph.D., University of Texas

Donahue, Charles T. (1960-2000) Professor
Department of English
B.A., Texas A & M University; M.A., University of Texas; Ph.D., Temple University

Donald Stoll 1992-2011 — Associate Professor
Department of Writing Arts
P.A. Valpariso Univ.; M.F.A., U of Texas at Austin, Ph.D. Indiania University.

Doskow, Minna (1986-2002) — Professor
Department of English and Dean
B.S., M.S., City College of N.Y.; M.A., University of Connecticut; Ph.D., University of Maryland

Douglas, Herbert (1980-2002) — Professor
Department of Law & Justice Studies
B.S., Duquesne; M.S., Glassboro State College; Ph.D., University of Toledo

Duff, Elizabeth R. (1959-1984) — Professor
Psychology
B.S., Kent State Univ.; M.A., New York Univ.; Ed.D., University of Maryland

Dugan, Ruth (1964-1981) — Professor
Psychology
B.A., Washington Square College; M.A., Ph.D., New York University

Dusseau, Ralph A. 1995-2021 — Professor
Department of Civil and Environmental Engineering
B.S., M.S., Ph.D., Michigan State University

Eckhardt, Edgar 1979-2015 — Professor
Radio, Television, and Film
B.A., Colgate University, M.A., Case Western Reserve University

Elliott, Gene V. (1963-1998) — Professor
Psychology
B.S., M.A., Michigan State University; Ph.D., University of Maryland

Emerson, Robert (1966-1992) — Assistant Professor and Assistant Director
Professional Lab Exper.
B.R.E., United Wesleyan College; M.A., Glassboro State College

Engebretson, Herschel (1969-1988) — Assistant Professor
Communications
B.A., Taylor University; M.A., University of Pennsylvania

Enslin, William L. (1974-2000) — Associate Professor
Management and Entrepreneurship
B.E., University of Pennsylvania; Ed.D., Rutgers University

Fanslau, Martha C. (1971-1980) — Librarian and Instructor
Library
B.A., University of Pennsylvania; M.A., Glassboro State College

Farnelli, Donald 1968-2016 — Professor
Department of Physics & Astronomy
B.S., Glassboro State College; M.Ed., Temple University; Ph.D., Union Graduate School

Fopeano, Richard (1992-2018) — Associate Professor
Health and Exercise Science
B.S., SUNY College at Cortland; M.A., Ball State University; Ph.D., Temple University

Foster, Bruce (1970-2005) — Professor
Reading
B.A., Trenton State College; M.S.Ed., Bucknell Univ.; Ed.D., Florida State University

Frankl, Razelle (1983-2000) — Professor
Management and Entrepreneurship
B.A., Temple University; M.B.A., Drexel University; M.A., Ph.D., Bryn Mawr College

Friebis, George (1969-1993) — Director
Educational Media
B.S., M.Ed., Temple University; M.A., Glassboro State College; Ed.D., Nova University

Frisone, John (1973-2002) Associate Professor
Psychology
B.A., Queens College; Ph.D., City University of New York

Fulginiti, Anthony (1976-2009) Professor
Department of Public Relations and Advertising
B.A., Laurel Hill College; M.A., Villanova University; M.A., Glassboro State College; APR Fellow PRSA

Gaer, Eleanor (1972-2014) Associate Professor
Psychology
B.S., University of Wisconsin at Milwaukee; M.S., University of Wisconsin at Madison; Ph.D., University of Illinois; J.D., Rutgers-Camden

Gallant, Mary J. (1992-2019) Associate Professor
Department of Sociology and Anthropology
B.A., M.A., University of Missouri; Ph.D., University of Minnesota

Gallinelli, John (1969-2009) Professor
Department of Art
B.Ed., Keene State College; Ph.D., University of Maryland

Gardiner, Dickinson (1967-1991) Professor
Secondary Education and Educational Foundations
B.A., Western Maryland College; M.Ed., Ed.D., Temple University

Garrabrant, William (1973-2003) Head of Circulation
Interlibrary Loan and Science Librarian
B.A., Hamilton College; M.S.Ed.,M.S.L.S., Syracuse University

Garrahan, John (1965-1982) Associate Professor
Special Education
B.A., City College of New York; M.S., Ed.D., University of Pennsylvania

Gaynor, William (1965-1987) Assistant Professor and Librarian
Library
B.A., Georgetown University; M.A., Fairfield University; M.S., Villanova University

Gillespie, John (1972-1992) Associate Professor
Communications
B.S., M.A., Glassboro State College

Glassberg, Rose (1964-1991) Professor
Secondary Education and Educational Foundations
B.S., West Chester State College; M.A., Middlebury College; Ph.D., Temple University

Goldberg, Leon (1968-1988) Associate Professor
Physical Science
B.S., City College of New York; M.S., New York University

Graneto, Philllip (1970-2011) Professor
Theatre and Dance
B.A Catholic University; MFA Carnegie Mellon

Granite, Bonita (1972-2017) Associate Professor
Department of Music
B.M.E., M.M.E., Indiana University

Greco, Monica A. 1990-2016 Associate Professor
Psychology
B.S., Albright College; M.A., Ph.D., Temple University

Green, Charles H. (1962-1993) Professor
Life Sciences
B.S., Penn State University; M.S., University of Delaware; Ph.D., Purdue University

Greenspan, Bertram 1961-2012 Professor
Music
B.M., American Conservatory of Music; M.M., D.M., Indiana University

Grupenhoff, Richard (1981-2009) Professor
Radio, Television, and Film
B.A., Xavier University; M.A., Purdue University; Ph.D., Ohio State University

Guerard, Michael P. (1971-1995) Associate Professor
Technology
B.S., M.Ed., Ph.D., Texas A & M University

Gundaker, Isabelle (1983-2003) Instructor
Composition and Rhetoric
B.A., Chestnut Hill College; M.A., Rutgers

Gurst, Lawrence (1966-1993) Assistant Professor
Elementary Education
MA.A., M.Ed., Temple University

Haba, James (1972-2003) Associate Professor
Department of English
B.A., Reed College; Ph.D., Cornell University

Habte-Georgis, Berhe 1988-2013 Professor
Department of Marketing and Business Information Systems
B.B.A., Haile Selassie University; M.S., Loyola University; D.B.A., Louisiana Tech University

Hamlet, Carolyn (1984-2012) Assistant Professor
Special Education Services and Instruction
B.S., University of Tennessee; M.Ed., Memphis State University; Ph.D., Temple University

Harold, Lucius 1986-2018 Professor
Department of Marketing and Business Information Systems
B.A., M.B.A., Inter-American University; Ph.D., University of Washington

Hartley, Stephen (2000-2015) Associate Professor
Computer Science
B.A., Washington College, M.S., Ph.D. University of Virginia

Hartman, Harriett (1996-2021) Professor
Department of Sociology and Anthropology
B.A University of California at Los Angeles; M.A University of Michigan at Ann Arbor; Ph.D Hebrew University of Jerusalem

Healy, Bartholomew (1985-2013) Professor
Theatre and Dance
B.A. College of the Holy Cross; M.F.A New York University

Hecht, Gregory 1995-2021 Associate Professor
Biological Sciences
B.S., University of Rochester; M.A., Princeton University; Ph.D., Princeton University

Hewsen, Robert H. (1967-1999) Professor
Department of History
B.A., University of Maryland; M.S., Catholic University; Ph.D., Georgetown University

Hitchner, Benjamin G. (1964-1998) Assistant Professor
Department of Political Science and Economics
B.S., Temple University; M.S., University of Pennsylvania

Humbert, John J. (1969-1995) Professor
Technology
B.S., University of Maryland; M.Ed., Pennsylvania State University; Ed.D. Texas A&M University

Husain, Syed (1960-1994) Professor
Biological Sciences
I.Sc., City Science College, Hyderabad; B.Sc., College of Agriculture, Osmania University,Hyderabad, India; M.S., Oklahoma State University; Ph.D., Cornell University

Itzkowitz, Martin 1989-2016 Associate Professor
Department of Writing Arts
B.A., Brooklyn College; M.A., Ph.D., New York University

Jaeger, Peter (1966-1981) Associate Professor
Communications
B.A., Mexico City College; M.Ed., University of Houston

Jam, Habib O. E. (1979-2013) Associate Professor
Department of Political Science and Economics
B.A. 1965 Texas Tech. University Economics;M.A. 1967 Texas Tech. University, Economics;Ph.D. 1975 Southern Illinois University, Economics

Janice Rowan 1976-2011 Professor
Department of Writing Arts
P.A Rutgers Univ. M.A. University of Michigan

Jeffrey, Linda (1973-2002) Professor
Psychology
B.A., University of Nebraska; M.A., Teacher's College Columbia University; M.A., University of Chicago; Ph.D., Rutgers University

Jensen, Ivar I. (1959-1981) Professor
Foundations of Education
B.Ed., Univ. of Connecticut; M.A., Middlebury College; Ed.D., Columbia University

Johnson, Richard J. (1971-2000) Associate Professor
Department of Political Science and Economics
B.A., M.A., Cert. of Russian Institute; Ph.D., Columbia University

Johnson, Theodore B. (1990-1999) Associate Professor
Educational Leadership
B.S., M.A., Temple University; Ed.D., Rutgers University

Johnson, Christine (1989-2002) Professor
Education Leadership
B.A., M.A., University of Wisconsin; Ed.D., Rutgers University

Jorgensen, Donna W. (2000-2014) Associate Dean
Education
B.S., West Chester State College; M.A., Villanova University; Ed.D., Widener University

Kaleta, Kenneth 1989-2016 Professor
Radio, Television, and Film
B.A., M.A., Villanova University; Ph.D., New York University

Kapel, David (1988-2002) Professor
Secondary Education and Foundations
B.S., M.Ed., Ed.D., Temple University

Kaplis-Hohwald, Laurie A. 1994-2021 Associate Professor
Department of World Languages
B.A., Queens College; M.A., Ph.D., University of Pennsylvania

Kardas, William (1968-2000) Head Reference Librarian
Library
B.S., M.L.S., Villanova University

Kasserman, David 1973-2019 Associate Professor
Department of Sociology and Anthropology
B.A., Indiana University; M.A., Ph.D., University of Pennsylvania

Keller, Horace (1960-1986) Professor
Psychology
B.S., West Chester University; M.Ed., Ed.D., Temple University

Kelly, Michael F. (1961-1998) Professor
Theatre and Dance
B.A., Elmhurst College; M.A., Ph.D., State University of Iowa

Kershner, E. Theodore (1968-1998) Assistant Professor
Health and Exercise Science
B.S., Ursinus College, M.Ed., Temple University

Kerwin, Mary Louise E. 1996-2022 — Professor
Department of Psychology
B.A., M.A., Ph.D., University of Notre Dame

Kirner, Clara (1971-1994) — Librarian
Library
B.A., Rutgers University; M.A., Drexel University

Krchnavek, Robert R. 1998-2022 — Professor
Department of Electrical & Computer Engineering
B.S., Marquette University; M.S., California Institute of Technology; Ph.D., Columbia University

Kress, Lee 1973-2011 — Associate Professor
Department of History
B.A., Johns Hopkins University; M.A., Ph.D., Columbia University

Kuder, S. Jay 1984-2022 — Professor
Department of Interdisciplinary and Inclusive Education
B.A. Trinity College; M.Ed., Temple University; Ed.D., Boston University

Kushner, William (1970-1999) — Professor
Communication Studies
B.A., Montclair State College; M.A., Temple University; Ph.D., Indiana University

Kyj, Larissa (1992-2018) — Professor
Department of Accounting and Finance
B.A., Fordham; M.A., Ph.D., Columbia University; CPA; CMA

Lancioni, Judith 1977-2014 — Associate Professor
Radio, Television, and Film
M.A. Ohio Univeristy

Lee, Elaine (1967-1994) — Associate Professor
Elementary/Early Childhood Education
B.S., M.A., Trenton State College; Ed.D., Temple University

Lemaire, Denyse 1998-2014 — Professor
Department of Geography, Planning & Sustainability
M.A., Ph.D., Universite Libre de Bruxelles

Leshay, Steven V. (1978-1999) — Associate Professor
Marketing
B.A., Lenoir Rhyne College; M.A., Glassboro State College; Ph.D., Temple University

Levinowitz, Lili (1989-2017) — Professor
Department of Science, Technology, Engineering, Art and Mathematics (STEAM)
B.M., Westminister Choir College; M.M., Ph.D., Temple University

Li, Yuhui (1992-2021) — Professor
Department of Sociology and Anthropology
B.A., Sichuan Foreign Languages Institute, China; M.A., Ohio University; Ph.D., Ohio State University

Libro, Antoinette (1968-2002) — Dean and Professor
Communication
B.A., Glassboro State College; Ph.D., New York University

Lint, Jerry N. (1964-1998) — Assistant Professor
Department of Geography, Planning & Sustainability
B.S., Clarion State College; M.Ed., Pennsylvania State University

Loigman, Barry M. (1970-1999) — Associate Professor
Psychology
B.A., M.A.,Temple University; Ph.D., Rutgers University

Longacre, David (1961-1989) — Assistant Registrar
Education
B.A., Gettysburg College; M.S., University of Pennsylvania

Lynch, Robert D. (1973-1999) Professor
Management and Entrepreneurship
B.S., M.S., Ph.D., Carnegie-Mellon University; SPHR

Magee-Sauer, Karen P. 1989-2021 Professor
Department of Physics and Astronomy
B.S., University of Virginia; M.S., Ph.D., University of Wisconsin-Madison

Mandayam, Shreekanth 1997-2022 Professor
Department of Electrical & Computer Engineering
B.S. Bangolore University, M.S., Ph.D. Iowa State University

Markowitz, Diane 1993-2011 Associate Professor
Department of Sociology and Anthropology
B.A., Tufts University; D.M.D., Tufts University School of Dental Medicine; Ph.D., University of Pennsylvania

Martin, Doris (1976-1987) Assistant Professor
Home Economics
B.S., Penn State University; M.S., Cornell University; Ed.D., Temple University

Martin, Marilyn (1995-2004) Dean
Library Services
B.A., M.L.S., University of Washington; M.A., University of Arkansas; Ph.D., Texas Woman's University

Martin, Deb 2003-2022 Professor
Department of Writing Arts
B.S., Western Michigan University; M.A., Ph.D., Texas Woman's University

Martínez-Yanes, Francisco (1966-2008) Professor
Department of World Languages
M.A., University of Rome, Italy; Diplôme, Alliance Française, Paris, France; Ph.D., University of Pennsylvania

Maxson, Jeffrey (1994-2019) Associate Professor
Department of Writing Arts
B.A., Yale University; M.A., Ph.D., University of California at Berkeley

Mayes, Joseph 1993-2021 Professor
Department of Music
B.A., Edison College; M.M., Shenandoah University

McConnell, Helen (1965-1995) Professor
Home Economics
B.S., State University College, Oneconta, NY; M.A., Columbia University; Ph.D., Michigan State University

McCrann, Virginia E. (1968-1985) Assistant Professor
Home Economics
B.A., M.Ed., Rutgers University

McHenry, Sandra L. 1993-2000 Associate Professor
Education-School Nursing
R.N., Helene Fuld School of Nursing; B.A., Rowan College of NJ; M.S., University of Delaware; D.N.Sc., Widener University

McKenzie, James J. (1954-1980) Professor
Department of English
B.A., Canisius College; M.A., Ph.D., Harvard University

McMeniman, Linda 1986-2000 Associate Professor
B.A., New York University; M.A., Ph.D., University of Berkeley

Mercier, J. Denis (1967-2002) Professor
Communication
B.A., Marian College; M.A., Niagara University; Ph.D., University of Pennsylvania

Meric, Gulser (1987-2019) Professor
Department of Accounting and Finance
B.A., Ankara University; M.S., Ph.D., Lehigh University

Meyers, Dorothy (1967-1985) Assistant Professor and Librarian
Library
B.A., State University of Iowa; M.L.S., Rutgers University

Mical, Agnes (1968-1996) Assistant Professor
Health and Exercise Science
B.S., M.S., West Chester University

Michaelson, James (1967-1991) Assistant Professor
Secondary Education and Education Foundations
B.S., M.A., Temple University

Micklus, Samuel C. (1968-1991) Professor
Technology
B.S., Philadelphia College of Art; M.A., Trenton State College; Ed.D., New York University

Miller, Allen 1976-2000 Chief Engineer, WGLS, College of Communication
College of Communication
B.S., M.S., SUNY-Oswego

Mitchell, Robert D. (1965-1997) Associate Professor
Department of Mathematics
B.S., M.A., University of Texas

Monahan, Thomas (1984-2009) Professor
Educational Leadership
B.A., LeMoyne College; Ed.M., Ed.D., Rutgers University

Monroe, Gerald (1968-1986) Associate Professor
Department of Art
B.S., M.A., Ed.D., New York University

Moore, Elizabeth (1972-2002) Professor
Biological Sciences
B.Sc., Rollins College; M.S., Ph.D., Cornell University

Moore, Oscar (1971-2003) Assistant Professor
Health and Exercise Science
B.S., M.S., Southern Illinois University

Moore, Edward 2007-2017 Professor
Department of Public Relations and Advertising
B.A., M.A., Glassboro State College (Rowan University); APR

Morford, Ida B (1956-1981) Professor
Psychology
B.S., Geneseo State College; M.A., Ph.D., Ohio State University

Moss, Janet 1192-2014 Associate Professor
Education
B.S.,Northwestern University; Ed.M. Harvard University; Ed.D., University of California at Los Angeles

Mosto, Patricia (1993-2009) Professor
Biological Sciences
National Teacher Certification, Teachers College N6; Licenciada in Biology (M.S.), University of Buenos Aires; M.A. equivalent, University of Texas at Austin; M.S., Drexel University; Ph.D., University of Buenos Aires

Moyer, Mel (1967-2000) Associate Professor
Psychology
B.A., Glassboro State College; M.Ed., Temple University; Ed.D., Rutgers University

Murashima, Kumiko (1971-2007) Associate Professor
Department of Art
B.F.A., Women's College of Fine Arts, Japan; M.F.A., Indiana University

Myers, John (1973-2011) Professor
Department of Sociology
B.S., Drexel University; M.A., Ph.D., Fordham University

Neff, George (1962-2000) Professor
Department of Art
B.S., Kutztown University; M.A., Columbia University; Ed.D., Pennsylvania State University

Newland, Robert 1983-2012 Professor Emerti
Chemistry & Biochemistry
B.A., Kalamazoo College; Ph.D., Wayne State University

Nichols, Lola (1960-1986) Assistant Professor
Elementary Education
B.S., Trenton State College; M.A., Columbia University; M.A., Glassboro State College

Ognibene, Gerald (1972-2008) Professor
Special Education
B.A., Niagara University; M.S., Canisius College; Ph.D., Ohio State University

Okorodudu, Corann (1968-2011) Professor
Psychology
B.A., Cuttington College, Liberia,; M.Ed., Ph.D., Harvard University

Oliver, Harold 1979-2011 Professor
Music
B.M., Peabody Conservatory; M.M., Yale Univ.; Ph.D., Princeton University

Orlando, Frank J. (1972-2008) Associate Professor
Foundations of Education
B.S., M.S., SUNY-Buffalo; Ed.D., West Virginia University

Pagell, Francesca Louise (1998-2012) Assistant Professor
Health and Exercise Science
B.A., M.Ed., Ed.D., Temple University

Palladino, Mary Anne (1964-1994) Professor
Communications
B.A., Immaculata College; M.A., Villanova University

Parker, Richard 1990-2013 Professor
Department of Marketing and Business Information Systems
B.A., Queens College; M.B.A., Rutgers University; Ph.D., City University of New York

Pastin, John R. (1998-2017) Professor
Department of Music
B.S., University of the State of New York; M.M., Northwestern University

Pickett, Ethel (1968-1987) Assistant Professor
Home Economics
B.S., University of Delaware; M.Ed., University of Maryland

Pike, Frank (1964-1987) Assistant Professor
Department of English
B.A., Suffolk University; M.A., Boston College; M.Ed., State College at Boston

Pizzillo, Joseph 1971-2018 Professor
Department of Interdisciplinary and Inclusive Education
B.A., M.A., SUNY-Albany; L.A.S.M.A., Universidad Nacional Autonoma de Mexico; M.S., M.A., Ph.D., University of Wisconsin-Madison

Porterfield, Richard (1961-1998) Associate Professor
Department of History
B.A., Johns Hopkins University; M.A., University of Pennsylvania; Ph.D., Temple University

Prieto, Andrew (1971-2008) Professor
Biological Sciences
B.A., Rutgers University; M.S., New Mexico State University; Ph.D., University of Missouri

Pritchard, Robert 1971-2011 Professor
Department of Accounting and Finance
B.S., M.B.A., Drexel University, M.A., Ed.D., University of Pennsylvani

Pujals, Enrique J. (1969-2000) Professor
Department of World Languages
B.A., M.A., Indiana State University; Ph.D., Rutgers University

Putman, Mary Lee 1971-2011 Associate Professor
Health and Exercise Science
B.S., SUNY College at Cortland; M.A., University of Maryland; Ph.D., Temple University

Rashiduzzaman, Mohammad (1973-2013) Associate Professor
Department of Political Science and Economics
M.A. and B.A. (Hons) University of Dhaka, (Bangladesh);Post-doctoral (senior)fellowship, Columbia University, New York ; Ph.D, University of Durham, England

Reeves, Edwin C. (1968-1996) Assistant Professor
Reading
B.A., M.A., Glassboro State College

Resnik, Benjamin (1965-1991) Assistant Professor
Communications
B.A., M.A., Glassboro State College

Richardson, Herbert A. (1966-1998) Assistant Professor
Department of History
B.M., M.M., Yale University; M.A., Ph.D., University of Pennsylvania.

Rios, Hector 1994-2019 Associate Professor
Department of Educational Services and Leadership
B.A., University of Puerto Rico; M.S., State University of New York; Ph.D., Temple University

Robinette, Joseph (1981-2005) Professor
Theatre and Dance
B.A., Carson-Newman College; M.A., Ph.D., Southern Illinois University

Robinson, Randall 1965-2000 Associate Professor
Education- Elementary
B.S., Ohio State University; M.S., University of Pennsylvania; Ed.D., Temple University

Romeo, George 1979-2021 Professor
Department of Accounting and Finance
B.S., Rider College; M.S., Loyola College; Ph.D., Drexel University; CPA

Rosenberg, Jerome J. (1973-2008) Associate Professor
Special Education
B.A., Oswego State Teachers College; M.A., Columbia University; Ed.D., Temple University; Ph.D., Heed University, West

Ross, Linda Wabschall (1974-2017) Professor
Department of Management and Entrepreneurship
A.B., Lycoming College; M.A., University of Toledo; Ph.D., Wayne State University

Rowand, Edith T. (1966-2000) Assistant Professor
Health and Exercise Science
B.S., The King's College; M.S., West Chester State College

Sakiey, Elizabeth (1974-2000) Professor
Reading
B.S., Eastern Michigan University; M.Ed., Ed.D., Rutgers University

Schreiber, Elliott (1967-1995) Associate Professor
Psychology
B.A., Upsala College; M.A., Bradley University; Ed.D., West Virginia University

Schultz, Charles 1972-2000 Professor
Chemistry & Biochemistry
B.S., University of Michigan; M.S., Ohio State University; Ph.D., University of Michigan

Schwarz, Charles (1967-1999) Assistant Professor
Department of Mathematics
B.A., St. John's University; M.S., Fordham University; M.S., Adelphi University; Ed.D., Rutgers University

Scott, Joanne (1989-2009) Associate Professor
Biological Sciences
B.S., M.S., Bucknell University; M.A., Lehigh University; Ph.D., University of Texas, Medical Branch at Galveston

Scott, Richard 1972 Professor
Department of Geography, Planning & Sustainability
B.A., University of Cincinnati; M.A., Ph.D., Syracuse University

Serfustini, Leonard 1971-1986 Professor
Department of Health and Physical Education
B.Ed., M.Ed., University of Buffalo; Ed.D., State University of New York

Shawver, Murl C. (1958-1974) Professor
Life Sciences
B.S., Central Missouri State College; M.Ed., University of Missouri; Ed.D., Columbia University

Shontz, Marilyn L. (1999-2009) Associate Professor
Special Education Services and Instruction
A.B., Heidelberg College (Ohio); M.S. in L.S., Case Western Reserve University; Ph.D., Florida State University

Shrader, Edith (1959-1968) Demonstration Teacher
Early Childhood Education
B.S., M.S., Glassboro State College

Sisco, Burton 1998-2018 Professor
Department of Educational Services and Leadership
B.A., M.Ed., University of Vermont; Ed.D., Syracuse University

Sizemore, Warner (1966-1987) Assistant Professor
Department of Philosophy and World Religions
B.A., East Tennessee State; M.A., Bob Jones University; M.A., Temple University; B.D., Lincoln University Theological Seminary

Slater, C. Stewart 1995-2020 Professor
Department of Chemical Engineering
B.S., M.S., M. Ph., Ph.D., Rutgers University

Smith, Steward (1968-1983) Assistant Professor
Elementary Education
B.A., Rutgers University; M.Ed., Temple University

Sorrentino, Carmela 1965-2009 Assistant Professor
Teacher Education (Early Childhood, Elementary Education, Subject Matter)
B.S., West Chester State College; M.Ed., Temple University

Spear, Miriam (1967-1983) Assistant Professor
Secondary Education
B.A., M.S., Glassboro State College

Spencer, Sonia B. (1990-2016) Associate Professor
Department of World Languages
B.A., Hunter College; M.A., Pennsylvania State University; Ph.D., Duke University

Stansfield, Charles 1966-2007 Professor
Department of Geography, Planning & Sustainability
B.S., West Chester University; M.S., Pennsylvania State University; Ph.D., University of Pittsburgh

Stevens, Kathleen (1972-1998) Associate Professor
Communication
B.A., Georgian Court College; M.A., Glassboro State College (Rowan)

Stoeckig, Keiko (1988-2017) Assistant Professor
Psychology
B.A., Bemidji University, Ph.D., Dartmouth University

Stone, Don C. (1968-2000) Associate Professor
Computer Science
E. Eng. Phys., Cornell University; M.S.E., Ph.D., University of Pennsylvania

Streb, Edward (1979-2017) Professor
Department of Communication Studies
B.S., M.A., Ph.D., Northwestern University

Sullivan, Jane E. (1972-1999) Professor
Reading
B.S., Seton Hall University; M.S., Ed.D., State University of New York, Albany

Tahamont, Maria 1993-2020 Professor
Department of Biological Sciences
B.A., Rowan University; M.S.Ed., Ph.D., Southern Illinois University

Taney, Mary C. (1967-1991) Professor
Department of History
B.A., College of Saint Teresa; M.A., Ph.D., Catholic University; Litt.D., Universita Cattolica del Sacro Cuore, Milan, Italy

Tannenbaum, Margaret D. (1971-2000) Professor
Secondary Education
B.A., Bryan College; M.Ed., Ed.D., Temple University

Tannenbaum, Theodore (1973-1998) Professor
Department of Sociology and Anthropology
B.A., M.A., Brooklyn College; Ph.D., Purdue University

Taylor, Albert (1964-1987) Professor
Foundations of Education
B.S., Trenton State College; M.Ed., Ed.D., Rutgers University

Tener, Morton (1968-2008) Professor
Secondary Education
B.S., Rider College; M.S., University of Pennsylvania; M.S., Ed.D., Temple University

Thomas J. Gallia 1970-2013 Vice President Emeritus/Senior Advisor to the President
Secondary Education
B.A., M.A., M.A., Glassboro State College; Ed.D., Rutgers University

Thyhsen, John (1969-2000) Professor
Music
B.M., M.M., Eastman School of Music

Tishler, Joseph (1964-2000) Professor
Department of Art
Cresson Scholar, Pennsylvania Academy of Fine Arts; B.F.A., M.F.A., University of Pennsylvania; D.A., Carnegie-Mellon University

Tomei, Mario (1964-1995) Professor
Educational Administration
B.A., Montclair State College; M.S., University of Pennsylvania; Ed.D., Temple University

Tracey, James H. (1994-2000) Dean/Professor
College of Engineering
B.S.E.E., M.S., Ph.D., Iowa State University

Tsuji, Thomas (1969-1995) Professor
Technology
B.S., M.S., Stoudt State College; Ph.D., Michigan State University

Viator, Martha 2006-2019 Associate Professor
Language, Literacy & Sociocultural Education
B.A., University of Louisiana-Lafayette; M.A., Ph.D., Auburn University

Viator, Timothy 1994-2019 Professor
Department of English
B.A., M.A., University of Louisiana; Ph.D., Auburn University

Vitto, Cindy L. 1989 – 2021 Professor
Department of English
B.A., Susquehanna University; M.A., Duke University; Ph.D., Rice University

Vogel, Hal (1984-2005) Professor
Department of Public Relations and Advertising
B.A., Temple University; M.A., William Paterson College; Ph.D., Antioch University; APR

Wade, Thomas 1976-2009 Assistant Professor
Music
B.M., Oberlin College; M.M., University of Connecticut

Washington, Judy (1971-2009) Associate Professor
Teacher Education (Early Childhood, Elementary Education, Subject Matter)
B.A., Brooklyn College; M.Ed., Ed.D., Temple University

Weatherford, Bernadyne (1987-2012) Associate Professor
Department of Political Science and Economics
B.A., M.A., Texas Tech University; Ph.D., University of New Mexico

Welsh, Charles (1973-1992) Professor
Marketing
B.S., Villanova University; M.B.A., Ph.D., University of Pennsylvania

Welsh, Carol (1983-2018) Associate Professor
Department of Accounting and Finance
B.S., M.B.A., Drexel University; Ed.D., University of Delaware; CPA, CIA

Westcott, Patrick (2003-2013) Associate Professor
Department of Teacher Education (Early Childhood, Elementary Education, Subject Matter)
B.A. University of Minnesota; M.A., University of Connecticut; M.A., Fairleigh Dickinson University; Ed.D., Teachers College Columiba University

Whitcraft, John (1963-1987) Professor
Department of Philosophy and World Religions
B.A., Asbury College; M.A., Temple University; B.D., Asbury Seminary; S.T.M., Boston University

White, Edward H. (1973-2000) Professor
Educational Leadership
B.A., Keene State College; M.S., Indiana State University; Ph.D., University of Maryland

Whittinghill, Dexter C. 1996-2021 Associate Professor and Department Head
Department of Mathematics
B.A., Middlebury College; M.S., University of Wisconsin-Milwaukee; M.S., Ph.D., Purdue University

Williams, Leonard J. (1990-2009) Associate Professor
Psychology
B.A., University of Delaware; M.A., McMaster University, Hamilton, Ont.; Ph.D., University of South Carolina

Wiltenburg, Joy Deborah (1991-2021) Professor
Department of History
B.A., M.A., University of Rochester; Ph.D., University of Virginia

Winand, Lois (1971-1991) Assistant Professor
Home Economics
B.S., M.S., Drexel University; Ed.D., Pennsylvania State University

Wolfe, Edward (1959-1994) Professor
Department of English
B.A., M.A., Ph.D., University of Pennsylvania

Woods, Wellington (1967-1998) Associate Professor
Chemistry and Physics
B.S., Glassboro State College; M.Ed., Rutgers University; Ph.D., Walden University

Wriggins, Thomas (1967-1992) Assistant Professor and Director of Support Services
Education
B.A., Glassboro State College; M.Ed., Temple University

Xin, Joy F. 1994-2020 Professor
Department of Interdisciplinary and Inclusive Education
B.A., Tsitsihar Teachers College, China; M.Ed., Ed.D., Peabody College of Vanderbilt University

Xu, Jianning 1988-2021 Professor
Department of Computer Science
B.S., Harbin Institute. of Technology, China; M.S., Ph.D., Stevens Institute. of Technology

Yang, Catherine 1995-2018 Professor Emeriti
Chemistry & Biochemistry
B.S., Zhejiang University; M.S., Ph.D., Tufts University

Young, Walter Byron (1972-1997) Professor
Department of Art
B.A., M.A., Glassboro State College; Ed.D., Pennsylvania State University

Young, Flora D. 1968
Department of Sociology and Anthropology
B.A., M.A., Howard University, Ed.D. University of Pennsylvania

Zahn, Richard (1960-1987) Professor
Foundations of Education
B.S., West Chester State College; M.Ed., Ed.D., Temple University

Zalusky, Donald (1966-1991) Associate Professor
Physical Sciences
B.S., M.A., University of Missouri; Ph.D., University of Delaware

Zeng, Xiaoming 1985-2021 Professor
Department of Mathematics
B.M., Northeast Ind. College, China; M.M., Academy of Science, China; Doctor of Science, Washington University

Zimmerman, Donald (1961-1992) Professor
Elementary and Early Childhood Education
B.S., M.A., State University of New York, Buffalo; Ed.D., Temple University

Accreditations

Middle States Commission on Higher Education
AACSB International - The Association to Advance Collegiate Schools of Business
ABET - Computing Accreditation Commission
ABET - Engineering Accreditation Commission
American Association of Colleges of Nursing - Commission on Collegiate Nursing Education
American Chemical Society
American Osteopathic Association - Commission on Osteopathic College Accreditation
American Osteopathic Association - Council on Osteopathic Postdoctoral Training Institutions
Certification in Education for Public Relations - Public Relations Society of America
Commission on Accreditation of Athletic Training Education
Council for Accreditation of Counseling and Related Educational Programs
Council for Accreditation of Educator Preparation
Liaison Committee on Medical Education
National Association of School Psychologists
National Association of Schools of Art and Design
National Association of Schools of Music
National Association of Schools of Theatre
National Wellness Institute

Memberships

American Council on Education
American Association of State Colleges and Universities
Association of American Colleges & Universities
Association of Governing Boards of Universities & Colleges
AACSB: The International Association for Management Education
BioNJ
Council of Graduate Schools
National Association of Schools
Middle States Association of Colleges & Schools Inc.

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