

B.S. in Biophysics

Academic Program Guide for New First-Year Students (Effective Fall 2020) Department of Physics & Astronomy (physics@rowan.edu)

Students who entered Rowan University prior to Fall 2018 should follow the guide for their program and start year in consultation with their advisor.

Rowan University Graduation Requirements for all Majors / Degrees

- Students must complete at least 120 semester hours (sh) of coursework that apply to their Rowan University degree.
- Students must have a cumulative GPA of at least 2.0 in Rowan University coursework. (Transfer courses/credit do not count toward the RU GPA.)
- A minimum of 30 sh of coursework must be completed at/through Rowan University.
- Only grades of “D–” or above may apply to graduation/degree requirements. (Some programs may set higher minimums.)
- Students must meet the Rowan Core and Rowan Experience Requirements.
 - An individual course can potentially satisfy one Rowan Core literacy and/or multiple Rowan Experience attributes.
 - Rowan Core and Rowan Experience designations are listed in course details in Section Tally (www.rowan.edu/registrar) and may also be searched on that site under “Attributes.” A list of Rowan Core courses is here: <https://confluence.rowan.edu/display/AS/Rowan+Core+Course+List>.
- Students must apply for graduation and should do so for the term in which they will complete all program requirements.

Rowan Core Requirements¹

Students must satisfy all **six** Rowan Core Literacies. A minimum total of 3 sh of coursework is required to satisfy each Literacy.

With the exception of the 9 sh counted here for Communicative Literacy, credits attached to the courses in this section will apply elsewhere.

- (COML) Communicative Literacy: *Must be met by the following three courses or their official equivalents:*
 - COMP 01 111 College Composition I (3 sh) COMP 01 112 College Composition II (3 sh) CMS 04 205 Public Speaking (3 sh)
- (ARTL) Artistic Literacy *Recommendation from major:*
- (GLBL) Global Literacy *Recommendation from major:*
- (HUML) Humanistic Literacy *Recommendation from major:*
- (QNTL) Quantitative Literacy *Recommendation from major:* MATH 01 130 (4 sh counted under non-program)
- (SCIL) Scientific Literacy *Recommendation from major:* CHEM 06 100 or PHYS 00220 (4 sh counted under non-program or major)

Subtotal of credits counted in this section: 9 sh

Rowan Experience Requirements

Students must satisfy all three Rowan Experience attributes. Credits attached to the courses in this section will apply elsewhere.

- (LIT) Broad-Based Literature Attribute *Recommendation from major:*
- (WI) Writing Intensive Attribute *Recommendation from major:*
- (RS) Rowan Seminar Attribute² *Recommendation from major:*

Non-Program Courses (24 sh)

Courses in this section cannot be in the major department.

Course #	Course Name	Course Attributes / Notes	Sem/Yr	Grade	Credits
MATH 01 130	Calculus I				4
MATH 01 131	Calculus II				4
CHEM 06 100	Chemistry I				4
CHEM 06 101	Chemistry II				4
MCB 01 101	Foundations in Biology for Biomedical Sciences I				4
MCB 01 102	Foundations in Biology for Biomedical Sciences II				4
					Subtotal: 24 sh

¹ The Rowan Core requirements are waived for transfer students with an earned A.A. or A.S. degree from a NJ community/county college.

² The Rowan Seminar requirement is waived for all students transferring 24 or more approved credits into Rowan University at the time of initial entry.

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Major Requirements (66 sh)

SUMMARY OF MAJOR REQUIREMENTS

- 25 sh of Foundational Courses
 - 15 sh of Mid-Level Courses
 - 15 sh of Upper-Level Courses
 - 11 sh of Approved Restricted Electives
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- 66 sh total

FOUNDATIONAL COURSES

Course #	Course Name	Course Designations / Notes	Sem/Yr	Grade	Credits
PHYS 00 130	Building Momentum as a Physics Student at Rowan and Beyond	Satisfies Rowan Seminar			1
PHYS 00 220	Introductory Mechanics	Satisfies Scientific Literacy			4
PHYS 00 221	Introductory Thermodynamics, Fluids, Waves, & Optics				4
PHYS 00 222	Introductory Electricity & Magnetism				4
MATH 01 230	Calculus III				4
CHEM 07 200	Organic Chemistry I				4
CHEM 07 203	Organic Chemistry II for BMS				4
Subtotal: 25 sh					

MID-LEVEL COURSES

Course #	Course Name	Course Designations / Notes	Sem/Yr	Grade	Credits
BMS 01 315	Biomedical Technologies I				4
PHYS 00 330	Mathematical Methods for Physics				3
PHYS 00 300	Modern Physics				4
CHEM 07 348 or BMS 01 333	Biochemistry or Cellular Biochemistry				4
Subtotal: 15 sh					

UPPER-LEVEL COURSES

Course #	Course Name	Course Designations / Notes	Sem/Yr	Grade	Credits
PHYS 00 360	Molecular Biophysics				4
PHYS 00 375	Introduction to Radiation Physics				4
PHYS 00 371	Biophysics: Fundamentals of Biomaterials				3
PHYS 00 451	Biophysics Research I				2
PHYS 00 452	Biophysics Research II (or other approved research)				2
Subtotal: 15 sh					

APPROVED RESTRICTED ELECTIVES (CHOOSE 11 SH FROM THE FOLLOWING LIST)

- *Physics* — any 300+ course excluding Physics/Astronomy Research (PHYS 00 350, 00 450; ASTR 11 350, 11 450)
- *Biology* — any 200+ course
- *Chemical Engineering*: Bioprocess Engineering [CHE 06 462]; Principles of Biomedical Processes [CHE 06 472]; Fundamentals of Particle Technology [CHE 06 474]; or Tissue Engineering Fundamentals [CHE 06 478]
- *Chemistry* — any 300+ level course and: Introduction to Forensic Science [CHEM 05 249]; or Analytical Chemistry [CHEM 09 249]

Course #	Course Name	Course Attributes / Notes	Sem/Yr	Grade	Credits
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Subtotal: 11 sh					

Free Electives for this Major/Degree (21 sh)

Students should choose Free Electives that satisfy any Rowan Core or Rowan Experience requirements that are not fulfilled by Major or Non-Program courses.

Course #	Course Name	Course Attributes / Notes	Sem/Yr	Grade	Credits
Subtotal: 21 sh					

Total Program Credits Required for this Major / Degree: 120 SH