

B.S. in Mechanical Engineering

Academic Program Guide for **New First-Year Students** (Effective Fall 2020) Department of Mechanical Engineering (jhar@rowan.edu)

Students who entered Rowan University prior to Fall 2020 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 & 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.

Program-Specific Graduation Requirements for this Major / Degree

- Students may need to receive a grade of C- or better in some courses satisfying Major 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 01111 College Comp. I (3 sh) ○ ENGR 01201 Sophomore Eng. Clinic I (4 sh) ○ ENGR 01202 Sophomore Eng. Clinic II (4 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 01130 (4 sh counted under non-program)
- (SCIL) Scientific Literacy *Recommendation from major:* CHEM 06100 (4 sh counted under non-program)

Subtotal of credits counted in this section: 11 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:* Satisfy with appropriate ARTL, GLBL or HUML or Ethics elective
- (WI) Writing Intensive Attribute *Recommendation from major:* ENGR 01403 (4 sh counted under major)
- (RS) Rowan Seminar Attribute² *Recommendation from major:* ENGR 01101 (2 sh counted under 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 01130	Calculus I	Satisfies Quantitative Literacy			4
CHEM 06100	Chemistry I	Satisfies Scientific Literacy			4
MATH 01131	Calculus II				4
MATH 01230	Calculus III				4
PYS 00220	Introductory Mechanics				4
PYS 00222	Introductory Electricity & Magnetism				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 (70 sh)

SUMMARY OF MAJOR REQUIREMENTS

- 26 sh of Foundational Courses
 - 24 sh of Mid-Level Courses
 - 14 sh of Upper-Level Courses
 - 6 sh of Mechanical Engineering Elective Courses
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- 70 sh total

FOUNDATIONAL COURSES

Course #	Course Name	Course Designations / Notes	Sem/Yr	Grade	Credits
ENGR 01101	First Year Eng. Clinic I				2
ENGR 01102	First Year Eng. Clinic II				2
CS 01104	Intro to Scientific Program: Matlab/CAD				3
ME 10101	Intro to Mechanical Design				3
ENGR 01283	Materials Science & Manufacturing				3
ENGR 01271	Statics				2
ENGR 01291	Dynamics				2
MATH 01235	Math for Engineering Analysis				4
ENGR 01273	Strength of Materials				3
ME 10210	Manufacturing & Measurement Tech				2
Subtotal:					26 sh

MID-LEVEL COURSES

Course #	Course Name	Course Designations / Notes	Sem/Yr	Grade	Credits
ENGR 01303	Junior Eng. Clinic I & II				4
ME 10310	Intro to Thermal-Fluid Sciences				4
ME 10330	Fluid Mechanics for ME				3
ME 10301	Machine Design				4
ME 10335	Heat Transfer for ME				3
MATH 01332	Intro to Numerical Analysis				3
ECE 09205	Principles & Apps. of ECE				3
Subtotal:					24 sh

UPPER-LEVEL COURSES

Course #	Course Name	Course Designations / Notes	Sem/Yr	Grade	Credits
ENGR 01403	Senior Eng. Clinic I & II	Satisfies WI requirement			4
ME 10342	Quality & Reliability				3
ME 10345	Dynamical Systems & Control				4
ENGR 01410	Finite Element Analysis				3
Subtotal:					14 sh

MECHANICAL ENGINEERING ELECTIVE COURSES

Choose 6 sh of courses from the following list.

Course #	Course Name	Course Attributes / Notes	Sem/Yr	Grade	Credits
<input type="radio"/>	Technical Elective	Approved ME, ENGR, ECE, CHE, CEE, BME 400 level or other approved 400-level courses; E.g., ENGR 01411 or 10413; ME 10442, 10450, 10443, 10405, 10422, or 10440			3
<input type="radio"/>	Technical Elective				3
Subtotal:					6 sh

Free Electives for this Major/Degree (15 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
		Any courses satisfying the Artistic Literacy			3
		Any courses satisfying the Global Literacy			3
		Any courses satisfying the Humanistic Literacy			3
	Business/Economics	E.g., ECON 04101 or 04102; INTR 01138; BUS 01105; ENT 06240, 06346 or 06450; MIS 02526			3
	Ethics	E.g., PHIL 09150, 09323, 09341, 09346, 09392 or 09393; INTR 01148 or 01174			3
Subtotal:					15 sh

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