

# B.S. in Mechanical Engineering

## Academic Program Guide for **New First-Year Students** (Effective Fall 2018) Department of Mechanical Engineering ([jhar@rowan.edu](mailto:jhar@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 & Rowan Experience designations are listed in course details in Section Tally ([www.rowan.edu/registrar](http://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 Requirements<sup>1</sup>

*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 Attribute<sup>2</sup>      *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
MATH 01131	Calculus II				4
CHEM 06100	Chemistry I	Satisfies Scientific Literacy			4
CS 04103	Computer Science & Programming				4
PYS 00220	Introductory Mechanics				4
PYS 00222	Introductory Electricity & Magnetism				4
					Subtotal: 24 sh

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

<sup>2</sup> 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 (78 sh)

### SUMMARY OF MAJOR REQUIREMENTS

- 27 sh of Foundational Courses
  - 26 sh of Mid-Level Courses
  - 13 sh of Upper-Level Courses
  - 12 sh of Mechanical Engineering Elective Courses
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- 78 sh total

### FOUNDATIONAL COURSES

Course #	Course Name	Course Designations / Notes	Sem/Yr	Grade	Credits
ENGR 01101	Freshman Eng. Clinic I				2
ENGR 01102	Freshman Eng. Clinic II				2
ME 10101	Intro to Mechanical Design				3
ENGR 01283	Materials Science & Manufacturing				3
ENGR 01271	Statics				2
ENGR 01291	Dynamics				2
MATH 01230	Calculus III				4
MATH 01235	Math for Engineering Analysis				4
ENGR 01273	Strength of Materials				3
ME 10211	ME Lab				2
<b>Subtotal: 27 sh</b>					

### MID-LEVEL COURSES

Course #	Course Name	Course Designations / Notes	Sem/Yr	Grade	Credits
ENGR 01303	Junior Eng. Clinic I & II				4
ME 10321	Thermal-Fluid Sciences I				6
ME 10322	Thermal-Fluid Sciences II				6
ME 10301	Machine Design				4
ME 10342	Quality & Reliability				3
ECE 09205	Principles & Apps. of ECE				3
<b>Subtotal: 26 sh</b>					

### 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 10343	Systems Dynamics & Control I				3
ME 10344	Systems Dynamics & Control II				3
ENGR 01410	Finite Element Analysis				3
<b>Subtotal: 13 sh</b>					

### MECHANICAL ENGINEERING ELECTIVE COURSES

Choose 12 sh of courses from the following list.

Course #	Course Name	Course Attributes / Notes	Sem/Yr	Grade	Credits
<input type="radio"/>	Technical Elective	Approved ENGR, ME, ECE, CHE, CEE, BME 400 level or other approved 400-level courses			3
<input type="radio"/>	Technical Elective				3
<input type="radio"/>	Technical Elective				3
<input type="radio"/>	Technical Elective				3
<b>Subtotal: 12 sh</b>					

## 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
	Ethics (various)	E.g., PHIL 09250, 09322, 09341, 09346, 09392 or 09393; INTR 01148 or 01174			3
	Business/Economics (various)	E.g., ECON 04101 or 04102; INTR 01138; BUS 01105; ENT 01240, 06346 or 06450; MIS 02526			3
<b>Subtotal: 15 sh</b>					

**Total Program Credits Required for this Major / Degree: 128 SH**