

# B.S. in Chemical Engineering

## Academic Program Guide for New First-Year Students (Effective Fall 2018) Department of Chemical Engineering ([savelski@rowan.edu](mailto:savelski@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 must receive a grade of C- or better in several of the 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 11 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:* ECON 04101 (3 sh counts under non-program)
- (QNTL) Quantitative Literacy                 *Recommendation from major:* MATH 01130 (4 sh counts under non-program)
- (SCIL) Scientific Literacy                      *Recommendation from major:* CHEM 06100 or PHYS 00220 (4 sh counts 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:*
- (WI) Writing Intensive Attribute             *Recommendation from major:* ENGR 01403 (4 sh counts under major)
- (RS) Rowan Seminar Attribute<sup>2</sup>             *Recommendation from major:* ENGR 01101 (2 sh counts under major)

### Non-Program Courses (32 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               |
| CHEM 06101 | Chemistry II                         |   |        |       | 4               |
| CS 01104   | Intro to Scientific Programming      |   |        |       | 3               |
|            | (ARTL) Artistic Literacy             | Rowan Core  |        |       | 3               |
|            | (GLBL) Global Literacy               | Rowan Core  |        |       | 3               |
|            | (HUML) Humanistic Literacy           | Rowan Core  |        |       | 3               |
| PHYS 00220 | Introductory Mechanics               | Satisfies Scientific Literacy                                       |        |       | 4               |
|            | Approved Biological Science Elective | Examples: BIOL 01110, BIOL 01113, BIOL 10211, BIOL 10210, MCB 01101 |        |       | 4               |
|            |                                      |   |        |       | Subtotal: 32 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 (86 sh)

### SUMMARY OF MAJOR REQUIREMENTS

- 30 sh of Foundational Courses
  - 26 sh of Mid-Level Courses
  - 18 sh of Upper-Level Courses
  - 12 sh of Chemical Engineering Electives
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- 86 sh total

### FOUNDATIONAL COURSES

| Course #   | Course Name                          | Course Designations / Notes                  | Sem/Yr | Grade | Credits |
|------------|--------------------------------------|--|--------|-------|---------|
| ENGR 01101 | Freshman Engineering Clinic I        | Satisfies RS requirement                     |        |       | 2       |
| ENGR 01102 | Freshman Engineering Clinic II       |  |        |       | 2       |
| CHE 06201  | Principles of Chemical Processes I   |  |        |       | 2       |
| CHE 06202  | Principles of Chemical Processes II  |  |        |       | 2       |
| CHE 06241  | Chemical Engineering Fluid Mechanics |  |        |       | 2       |
| CHEM 07200 | Organic Chemistry I                  |  |        |       | 4       |
|            | Approved Chemistry Elective          | Examples: CHEM 07201; CHEM 07202, CHEM 09249 |        |       | 4       |
| MATH 01131 | Calculus II                          |  |        |       | 4       |
| MATH 01230 | Calculus III                         |  |        |       | 4       |
| MATH 01235 | Math for Engineering Analysis        |  |        |       | 4       |
| Subtotal:  |                                      |  |        |       | 30 sh   |

### MID-LEVEL COURSES

| Course #   | Course Name                     | Course Designations / Notes | Sem/Yr | Grade | Credits |
|------------|---------------------------------|-----------------------------|--------|-------|---------|
| ENGR 01303 | Junior Eng. Clinic I & II       |                             |        |       | 4       |
| CHE 06309  | Process Fluid Transport         |                             |        |       | 2       |
| CHE 06310  | Chemical Eng. Thermodynamics I  |                             |        |       | 3       |
| CHE 06311  | Heat Transfer Processes         |                             |        |       | 2       |
| CHE 06312  | Separation Processes I          |                             |        |       | 2       |
| CHE 06314  | Separation Processes II         |                             |        |       | 4       |
| CHE 06315  | Chemical Eng. Thermodynamics II |                             |        |       | 3       |
| CHE 06316  | Chemical Reaction Engineering   |                             |        |       | 4       |
| CHE 06381  | Chemical Eng. Materials         |                             |        |       | 2       |
| Subtotal:  |                                 |                             |        |       | 26 sh   |

### UPPER-LEVEL COURSES

| Course #   | Course Name                                    | Course Designations / Notes | Sem/Yr | Grade | Credits |
|------------|--|-----------------------------|--------|-------|---------|
| CHE 06401  | Chemical Process Component Design              |                             |        |       | 4       |
| CHE 06403  | Unit Operations Experimental Design & Analysis |                             |        |       | 2       |
| CHE 06404  | Unit Operations II                             |                             |        |       | 2       |
| CHE 06405  | Process Dynamics and Controls                  |                             |        |       | 3       |
| CHE 06406  | Chemical Plant Design                          |                             |        |       | 3       |
| ENGR 01403 | Senior Engineering Clinic I & II               | Satisfies WI requirement    |        |       | 4       |
| Subtotal:  |  |                             |        |       | 18 sh   |

### CHEMICAL ENGINEERING ELECTIVES

| Course #              | Course Name | Course Attributes / Notes | Sem/Yr | Grade | Credits |
|-----------------------|-------------|---------------------------|--------|-------|---------|
| <input type="radio"/> |             |                           |        |       | 3       |
| <input type="radio"/> |             |                           |        |       | 3       |
| <input type="radio"/> |             |                           |        |       | 3       |
| <input type="radio"/> |             |                           |        |       | 3       |
| Subtotal:             |             |                           |        |       | 12 sh   |

## Free Electives for this Major/Degree (3 sh)

| Course #  | Course Name | Course Attributes / Notes | Sem/Yr | Grade | Credits |
|-----------|-------------|---------------------------|--------|-------|---------|
|           |             |                           |        |       | 3       |
| Subtotal: |             |                           |        |       | 3 sh    |

Total Program Credits Required for this Major / Degree: 132 SH