

B.S. in Biophysics

Academic Program Guide for New First-Year Students (Effective Fall 2018) 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 & 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 01111 College Composition I (3 sh) COMP 01112 College Composition II (3 sh) CMS 04205 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 01130 (4 sh counted under non-program)
- (SCIL) Scientific Literacy *Recommendation from major:* CHEM 06100 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 01130	Calculus I				4
MATH 01131	Calculus II				4
CHEM 06100	Chemistry I				4
CHEM 06101	Chemistry II				4
BIOL 01205	Foundations in Biology for BMS 1				4
BIOL 01206	Foundations in Biology for BMS 2				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 (64 sh)

SUMMARY OF MAJOR REQUIREMENTS

- 24 sh of Foundational Courses
 - 15 sh of Mid-Level Courses
 - 14 sh of Upper-Level Courses
 - 11 sh of Approved Restricted Electives
-
- 64 sh total

FOUNDATIONAL COURSES

Course #	Course Name	Course Designations / Notes	Sem/Yr	Grade	Credits
PHYS 00220	Introductory Mechanics-RS				4
PHYS 00221	Introductory Thermodynamics, Fluids, Waves, & Optics				4
PHYS 00222	Introductory Electricity & Magnetism				4
MATH 01230	Calculus III				4
CHEM 07200	Organic Chemistry I				4
CHEM 07203	Organic Chemistry II for BMS				4
Subtotal: 24 sh					

MID-LEVEL COURSES

Course #	Course Name	Course Designations / Notes	Sem/Yr	Grade	Credits
BMS01 315	Basic Instrumentation for BMS				4
PHYS00 330	Mathematical Physics				3
PHYS00 300	Modern Physics				4
CHEM07 348 or BMS01 333	Biochemistry or Cellular Biochemistry				4
Subtotal: 15 sh					

UPPER-LEVEL COURSES

Course #	Course Name	Course Designations / Notes	Sem/Yr	Grade	Credits
PHYS00 360	Molecular Biophysics				4
PHYS00 371	Biophysics: Fundamentals of Biomaterials				3
PHYS00 451	Biophysics Research I				2
PHYS00 452	Biophysics Research II or other approved research course(s)				2
PHYS00 475	Radiation Physics				3
Subtotal: 14 sh					

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

- *Physics* — any 300+ course
- *Biology* — any 200+ course
- *Chemical Engineering*: Bioprocess Engineering [CHE 06462]; Principles of Biomedical Processes [CHE 06472]; Fundamentals of Particle Technology [CHE 06474]; or Tissue Engineering Fundamentals [CHE 06478]
- *Chemistry* — any 300+ level course and: Introduction to Forensic Science [CHEM 05249]; or Analytical Chemistry [CHEM 09249]

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

Free Electives for this Major/Degree (23 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: 23 sh					

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