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 Requirements

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
- (GLBL) Global Literacy
- (HUML) Humanistic Literacy
- (QNTL) Quantitative Literacy
- (SCIL) Scientific Literacy

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
- (WI) Writing Intensive Attribute
- (RS) Rowan Seminar Attribute

Non-Program Courses (24 sh)

Courses in this section cannot be in the major department.

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Name</th>
<th>Course Attributes / Notes</th>
<th>Sem/Yr</th>
<th>Grade</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 01 130</td>
<td>Calculus I</td>
<td></td>
<td>4</td>
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<tr>
<td>MATH 01 131</td>
<td>Calculus II</td>
<td></td>
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<tr>
<td>CHEM 06 100</td>
<td>Chemistry I</td>
<td></td>
<td>4</td>
<td></td>
<td></td>
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<tr>
<td>CHEM 06 101</td>
<td>Chemistry II</td>
<td></td>
<td>4</td>
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<tr>
<td>MCB 01 101</td>
<td>Foundations in Biology for Biomedical Sciences I</td>
<td></td>
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<tr>
<td>MCB 01 102</td>
<td>Foundations in Biology for Biomedical Sciences II</td>
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</tbody>
</table>

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.
B.S. in Biophysics

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
- 66 sh total

**FOUNDATIONAL COURSES**

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

**MID-LEVEL COURSES**

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<tr>
<th>Course #</th>
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<th>Grade</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMS 01 315</td>
<td>Biomedical Technologies I</td>
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<td>4</td>
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<tr>
<td>PHYS 00 330</td>
<td>Mathematical Methods for Physics</td>
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<td>3</td>
<td></td>
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<tr>
<td>PHYS 00 300</td>
<td>Modern Physics</td>
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<td>4</td>
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<tr>
<td>CHEM 07 348 or BMS 01 333</td>
<td>Biochemistry or Cellular Biochemistry</td>
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Subtotal: 15 sh

**UPPER-LEVEL COURSES**

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<tr>
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<th>Credits</th>
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<tbody>
<tr>
<td>PHYS 00 360</td>
<td>Molecular Biophysics</td>
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<tr>
<td>PHYS 00 375</td>
<td>Introduction to Radiation Physics</td>
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<tr>
<td>PHYS 00 371</td>
<td>Biophysics: Fundamentals of Biomaterials</td>
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<td>3</td>
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<tr>
<td>PHYS 00 451</td>
<td>Biophysics Research I</td>
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<tr>
<td>PHYS 00 452</td>
<td>Biophysics Research II (or other approved research)</td>
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Subtotal: 15 sh

**APPROVED RESTRICTED ELECTIVES (CHOOSE 11 SH FROM THE FOLLOWING LIST)**
- **Physcis** — 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]

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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.*

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Subtotal: 21 sh

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