B.A. in Physics

Academic Program Guide for **New First-Year Students** (Effective Fall 2022)

**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](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**: Recommendation from major
- **(GLBL) Global Literacy**: Recommendation from major
- **(HUML) Humanistic Literacy**: Recommendation from major: PHIL 09 261 (3 sh counted under non-program)
- **(QNTL) Quantitative Literacy**: Recommendation from major: MATH 01 130 (4 sh counted under non-program)
- **(SCIL) Scientific Literacy**: Recommendation from major: PHYS 00 220 (4 sh counted under 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: PHIL 09 261 (3 sh counted under non-program)
- **(RS) Rowan Seminar Attribute**: Recommendation from major: PHYS 00 130 (1 sh counted under major requirements)

## Non-Program Courses (minimum 18 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>CS 04 103</td>
<td>Computer Science &amp; Programming Intro to Scientific Programming</td>
<td>CS&amp;P preferred²</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHIL 09 261</td>
<td>Philosophical Perspectives on Science-WI</td>
<td>Satisfies Humanistic &amp; WI</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH 01130</td>
<td>Calculus I</td>
<td>Satisfies Quantitative</td>
<td>4</td>
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<td></td>
</tr>
</tbody>
</table>

Then choose one of the following course sequences:

- **Biology sequence (take the following two courses):**
  - MCB 01 101 Foundations in Biology for Biomedical Sciences I
  - MCB 01 102 Foundations in Biology for Biomedical Sciences II

- **Chemistry sequence (take the following two courses):**³
  - CHEM 06 100 Chemistry I
  - CHEM 06 101 Chemistry II

- **Computer Science sequence (take 8 credits of courses to fulfill CS Minor or CUGS):**
  - CS
  - CS

- **Other sequence (proposed by student and approved by advisor):**

Subtotal: 19 sh

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² The Rowan Core requirements are waived for transfer students with an earned A.A. or A.S. degree from a NJ community/county college.
³ The Rowan Seminar requirement is waived for all students transferring 24 or more approved credits into Rowan University at the time of initial entry.
⁴ Students in a CS minor or CUGS may apply CS 04 113 (or other required course) here instead and using additional courses for the CS sequence below.

⁵ Chemistry sequence recommended for those considering teaching, along with two more CHEM courses for Physical Science certification.
Major Requirements (42 sh)

**SUMMARY OF MAJOR REQUIREMENTS**
- 17 sh of Foundational Courses
- 15 sh of Mid-Level Courses
- 10 sh of Upper-Level Courses
- 42 sh total

**FOUNDATIONAL COURSES**

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Name</th>
<th>Course Designations / Notes</th>
<th>Sem/Yr</th>
<th>Grade</th>
<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></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>PHYS 00 220</td>
<td>Introductory Mechanics</td>
<td></td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>PHYS 00 221</td>
<td>Introductory Thermodynamics, Fluids, Waves, &amp; Optics</td>
<td></td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>PHYS 00 222</td>
<td>Introductory Electricity &amp; Magnetism</td>
<td></td>
<td></td>
<td></td>
<td>4</td>
</tr>
</tbody>
</table>

Subtotal: 17 sh

**MID-LEVEL COURSES**

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Name</th>
<th>Course Designations / Notes</th>
<th>Sem/Yr</th>
<th>Grade</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 01 230</td>
<td>Calculus III</td>
<td></td>
<td></td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 00 300</td>
<td>Modern Physics</td>
<td></td>
<td></td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Any PHYS or ASTR course</td>
<td></td>
<td></td>
<td></td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Any PHYS or ASTR course</td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td></td>
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Subtotal: 15 sh

**UPPER-LEVEL COURSES**

<table>
<thead>
<tr>
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<th>Sem/Yr</th>
<th>Grade</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 300+</td>
<td>level PHYS</td>
<td></td>
<td>3</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>PHYS 300+</td>
<td>level PHYS</td>
<td></td>
<td>3</td>
<td></td>
<td>4</td>
</tr>
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</table>

Subtotal: 10 sh

**Free Electives for this Major/Degree (50 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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</table>

Subtotal: 50 sh

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

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5 Excluding Physics/Astronomy Research I, II, III, IV (PHYS 00 350 and 00 450; ASTR 11 350 and 11 450)

6 May take two instances of Physics Learning Assistant for… (PHYS 00 361, 00 362 or 00 363) courses to fill this slot

Updated 05/14/2018