BACHELOR OF ARTS (BA) DEGREE WITH A MAJOR IN PHYSICS

Program Learning Outcomes for the BA Degree with a Major in Physics

Upon completing the BA degree with a major in Physics, students will be able to:

1. Demonstrate an understanding of fundamental concepts in Mechanics.
2. Demonstrate an understanding of fundamental concepts in Electromagnetism.
3. Demonstrate an understanding of fundamental concepts in Quantum Mechanics.
4. Demonstrate an understanding of a variety of physics topics taken from: statistical and thermal physics, biological physics, nuclear and particle physics, solid state physics, computational physics, and/or plasma physics.

Requirements for the BA Degree with a Major in Physics

For general university requirements, see Graduation Requirements (ga.rice.edu/undergraduate-students/academic-policies-procedures/graduation-requirements). Students pursuing the BA degree with a major in Physics must complete:

- A minimum of 47 credit hours to satisfy major requirements.
- A minimum of 120 credit hours to satisfy degree requirements.
- A minimum of 60 credit hours outside of major requirements.
- A minimum of 14 credit hours taken at the 300-level or above.

The courses listed below satisfy the requirements for this major. In certain instances, courses not on this official list may be substituted upon approval of the department’s undergraduate committee. (Course substitutions must be formally applied and entered into Degree Works by the major’s Official Certifier (https://registrar.rice.edu/facstaff/degreeworks/officialcertifier).) Students and their academic advisors should identify and clearly document the courses to be taken.

Summary

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total Credit Hours Required for the Major in Physics</td>
<td>47</td>
</tr>
<tr>
<td></td>
<td>Total Credit Hours Required for the BA Degree with a Major in Physics</td>
<td>120</td>
</tr>
</tbody>
</table>

Degree Requirements

Core Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select 1 from the following:</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 101 &amp; PHYS 103</td>
<td>MECHANICS (WITH LAB) and MECHANICS DISCUSSION</td>
<td>4</td>
</tr>
</tbody>
</table>

Math

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 101</td>
<td>SINGLE VARIABLE CALCULUS I</td>
<td>3</td>
</tr>
<tr>
<td>or MATH 105</td>
<td>AP/OTH CREDIT IN CALCULUS I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 102</td>
<td>SINGLE VARIABLE CALCULUS II</td>
<td>3</td>
</tr>
<tr>
<td>or MATH 106</td>
<td>AP/OTH CREDIT IN CALCULUS II</td>
<td>3</td>
</tr>
<tr>
<td>MATH 211</td>
<td>ORDINARY DIFFERENTIAL EQUATIONS AND LINEAR ALGEBRA</td>
<td>3</td>
</tr>
<tr>
<td>or MATH 220</td>
<td>HONORS ORDINARY DIFFERENTIAL EQUATIONS</td>
<td>3</td>
</tr>
<tr>
<td>or MATH 221</td>
<td>HONORS CALCULUS III</td>
<td>3</td>
</tr>
<tr>
<td>MATH 212</td>
<td>MULTIVARIABLE CALCULUS</td>
<td>3</td>
</tr>
<tr>
<td>or MATH 222</td>
<td>HONORS CALCULUS IV</td>
<td>3</td>
</tr>
<tr>
<td>CAAM 210</td>
<td>INTRODUCTION TO ENGINEERING COMPUTATION</td>
<td>3</td>
</tr>
</tbody>
</table>

1 Computational and Applied Mathematics (CAAM) or Mathematics (MATH) course at the 300-level or above.

Total Credit Hours Required for the Major in Physics 47

Additional Credit Hours to Complete BA Degree Requirements 13

Footnotes and Additional Information

* Includes coursework completed as distribution credit, FWIS, LPAP, upper-level, residency (hours taken at Rice), 60 hours outside of the major (if applicable), and any additional academic program requirements. The “hours outside of the major” requirement may include all of the above university requirements.

Policies for the BA Degree with a Major in Physics

Transfer Credit

For Rice University’s policy regarding transfer credit, see Transfer Credit (ga.rice.edu/undergraduate-students/academic-policies-procedures/transfer-credit). Some departments and programs have additional restrictions on transfer credit. The Office of Academic Advising maintains the university’s official list of transfer credit advisors on their website: https://oaa.rice.edu. Students are encouraged to meet with their
academic program’s transfer credit advisor when considering transfer
credit possibilities.

**Departmental Transfer Credit Guidelines**

Students pursuing the major in Physics should be aware of the following
departmental transfer credit guidelines:

- Requests for transfer credit will be considered by the program
director (and/or the program’s official transfer credit advisor) on an
individual case-by-case basis.

**Additional Information**

For additional information, please see the Physics and Astronomy
website: [https://physics.rice.edu/](https://physics.rice.edu/)

**Opportunities for the BA Degree with a Major in Physics**

**Academic Honors**

The university recognizes academic excellence achieved over an
undergraduate’s academic history at Rice. For information on university
honors, please see Latin Honors ([ga.rice.edu/undergraduate-students/
honors-distinctions/university](https://ga.rice.edu/undergraduate-students/honors-distinctions/university)) (summa cum laude, magna cum laude, and
cum laude) and Distinction in Research and Creative Work ([ga.rice.edu/
undergraduate-students/honors-distinctions/university](https://ga.rice.edu/undergraduate-students/honors-distinctions/university)). Some
departments have department-specific Honors awards or designations.

**Research in the Department of Physics and Astronomy**

The Physics and Astronomy Department encourages undergraduate
participation in research, both within the department and through
extramural programs. For current opportunities, please visit the
Department’s website and click on the Undergraduate Study link, at:
[https://www.physics.rice.edu/](https://www.physics.rice.edu/)

**Additional Information**

For additional information, please see the Physics and Astronomy
website: [https://physics.rice.edu/](https://physics.rice.edu/)