

**Department PHYSICS**  
**Contact Person David Schoepf, Chair**

**Bucknell University Educational Outcomes Assessment Plan**

Departmental Mission	<p>The primary mission of the physics program is to provide a curriculum that offers a solid foundation in the concepts of classical and modern physics. This foundation may serve as the platform for further study at the graduate level or may be the basis for a wide variety of careers requiring critical thinking and problem solving skills. As a fundamental constituent of a liberal education, the physics program seeks to foster an appreciation for the fundamental principles of the natural world and an understanding of the scientific method of inquiry.</p>
Departmental Goals	<p><b>For B.S. and B.A. majors in the Physics program:</b></p> <ul style="list-style-type: none"> <li><b>I.</b> (Knowledge) All students will have an operational knowledge in the principal areas of physics.</li> <li><b>II.</b> (Communication) All students will develop the necessary skills to effectively communicate their scientific knowledge.</li> <li><b>III.</b> (Career) Students will be provided with adequate preparation for career paths leading to graduate school, industry, education and other professional roles.</li> </ul> <p><b>For Non-Majors Meeting Lab-Science Requirements:</b></p> <p>As part of a broad liberal arts curriculum, the physics program seeks to introduce students to the fundamental ideas that have shaped our knowledge of the universe, and to help students appreciate the extent to which physics plays a role in their lives.</p>
Departmental Learning Objectives	<p><b>Objectives for B.S. and B.A. majors in the Physics program:</b></p> <ul style="list-style-type: none"> <li><b>I. Knowledge</b> <ul style="list-style-type: none"> <li><b>A.</b> Students will successfully complete and demonstrate a proficiency in courses that develop the fundamental areas of physics.</li> <li><b>B.</b> Students will develop a working knowledge of a broad array of diverse physical phenomena that are based upon fundamental concepts.</li> <li><b>C.</b> Students will demonstrate proficiency in the methods of scientific inquiry</li> <li><b>D.</b> Students will develop their skills in critical thinking and problem solving, allowing them to formulate and solve quantitative problems.</li> </ul> </li> </ul>

**II. Communication**

- A. Students will be able to write a well-organized, logical, scientifically sound research paper or report.
- B. Students will be able to present a well-organized and scientifically sound oral presentation on a topic in physics or an application of physics.

**III. Career**

- A. Students will be encouraged to pursue research experiences both on and off campus
- B. Students will be educated about the wide variety of career paths via seminars, workshops and invited speakers
- C. Faculty in the department will provide strong personalized advising allowing students to make informed post-graduation career decisions.

**Objectives for Non-Majors Meeting Lab-Science Requirements:**

- A. Through courses designed for the non-major, students will demonstrate an understanding of the fundamental principles in the fields of physics and astronomy.
- B. Students will develop an appreciation for the methods of scientific inquiry through laboratory experiences.
- C. Students will develop the critical thinking and problem solving skills required in most scientific disciplines.