BACHELOR OF SCIENCE WITH A MAJOR IN PHYSICS

Study fundamental physical laws and learn how to apply them to the world around us through GW's Physics program. Through courses ranging from classical mechanics to electromagnetic theory, the physics program aims to strengthen your ability to use mathematical logic, deductive reasoning, developed intuition, and careful observation. You'll find a unique home in our Science and Engineering Hall that features more than 100 laboratories and classrooms. You'll also get the chance to engage in research on campus and at local research centers, such as the National Institutes of Standards and Technology, the Naval Research Laboratories, NASA, and the Thomas Jefferson Electron Accelerator Facility.

Visit the program website (https://physics.columbian.gwu.edu/undergraduate/) for additional information.

ADMISSIONS

For more information on the admission process, please visit the Office of Undergraduate Admissions website. Applications may be submitted via the Common Application.

Supporting documents not submitted online should be mailed to:
Office of Undergraduate Admissions
The George Washington University
800 21st Street NW, Suite 100
Washington DC 20052

Contact for questions:
gwadm@gwu.edu or 202-994-6040

REQUIREMENTS

The following requirements must be fulfilled:

The general requirements stated under Columbian College of Arts and Sciences, Undergraduate Programs (http://bulletin.gwu.edu/arts-sciences/#degreeregulationstext).

Program-specific curriculum:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Introductory courses (26 credits)</td>
<td></td>
</tr>
<tr>
<td>CSCI 1012</td>
<td>Introduction to Programming with Python</td>
<td></td>
</tr>
<tr>
<td>or MAE 1117</td>
<td>Introduction to Engineering Computations</td>
<td></td>
</tr>
<tr>
<td>PHYS 1021</td>
<td>University Physics I</td>
<td></td>
</tr>
<tr>
<td>or PHYS 1025</td>
<td>University Physics I with Biological Applications</td>
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Advanced courses (46 credits)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 1022</td>
<td>University Physics II</td>
<td></td>
</tr>
<tr>
<td>or PHYS 1026</td>
<td>University Physics II with Biological Applications</td>
<td></td>
</tr>
<tr>
<td>PHYS 2023</td>
<td>Modern Physics</td>
<td></td>
</tr>
<tr>
<td>MATH 1231</td>
<td>Single-Variable Calculus I</td>
<td></td>
</tr>
<tr>
<td>MATH 1232</td>
<td>Single-Variable Calculus II</td>
<td></td>
</tr>
<tr>
<td>MATH 2233</td>
<td>Multivariable Calculus</td>
<td></td>
</tr>
<tr>
<td>MATH 2184</td>
<td>Linear Algebra I</td>
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</tbody>
</table>

Electives

Three courses (9 credits) in Physics (PHYS) numbered 3000 or above and/or Astronomy (ASTR) numbered 2000 or above.

GENERAL EDUCATION

In addition to the University General Education Requirement (http://bulletin.gwu.edu/university-regulations/general-education/), undergraduate students in Columbian College must complete a further, College-specific general education curriculum—Perspective, Analysis, Communication (G-PAC) (http://bulletin.gwu.edu/arts-sciences/gpac/) as well as CCAS 1001. Together with the University General Education
Requirement, G-PAC engages students in active intellectual inquiry across the liberal arts. Students achieve a set of learning outcomes that enhance their analytical skills, develop their communication competencies, and invite them to participate as responsible citizens who are attentive to issues of culture, diversity, and privilege.

**Coursework for the University General Education Requirement is distributed as follows:**

- **Writing**—4 credits in UW 1020 University Writing and 6 credits distributed over at least two writing in the discipline (WID) courses taken in separate semesters. WID courses are designated by a “W” appended to the course number.
- **Humanities**—one approved humanities course that involves critical thinking skills.
- **Mathematics or statistics**—one approved course in either mathematics or statistics.
- **Natural or physical science**—one approved laboratory course that employs the process of scientific inquiry.
- **Social Sciences**—two approved courses in the social sciences that employ critical thinking, quantitative reasoning, or scientific reasoning.

**Coursework for the CCAS G-PAC requirement is distributed as follows:**

- **Arts**—one approved arts course that involves the study or creation of artwork based on an understanding or interpretation of artistic traditions or knowledge of art in a contemporary context.
- **Global or cross-cultural perspective**—one approved course that analyzes the ways in which institutions, practices, and problems transcend national and regional boundaries.
- **Local or civic engagement**—one approved course that develops the values, ethics, disciplines, and commitment to pursue responsible public action.
- **Oral communication**—one approved course in oral communication.
- **Natural or physical science**—one additional approved laboratory course that employs the process of scientific inquiry (in addition to the one course in this category required by the University General Education Requirement).
- **Humanities**—one additional approved humanities course that involves critical thinking skills (in addition to the one course in this category required by the University General Education Requirement).
- **CCAS 1001 First-Year Experience**

**Certain courses are approved to fulfill GPAC requirements in more than one category.**

Courses taken in fulfillment of G-PAC requirements may also be counted toward majors or minors. Transfer courses taken prior to, but not after, admission to George Washington University may count toward the University General Education Requirement and G-PAC, if those transfer courses are equivalent to GW courses that have been approved by the University and the College.

Lists of approved courses in the above categories are included on each undergraduate major’s (http://bulletin.gwu.edu/arts-sciences/#majorstext) page in this Bulletin.

**SPECIAL HONORS**

In addition to the general requirements stated under University Regulations, in order to be considered for graduation with Special Honors, a student must submit for departmental approval an honors thesis based on a two-semester research project. In addition, the student must have a cumulative grade-point average of at least 3.5 in physics courses and 3.5 overall.