

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.

For more information, visit the program website (<https://physics.columbian.gwu.edu/undergraduate/>).

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:

Code	Title	Credits
Required		
Introductory courses (26 credits)		
CSCI 1012	Introduction to Programming with Python	
or MAE 1117	Introduction to Engineering Computations	
PHYS 1021	University Physics I	
or PHYS 1025	University Physics I with Biological Applications	

PHYS 1022	University Physics II
or PHYS 1026	University Physics II with Biological Applications

PHYS 2023	Modern Physics
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MATH 1231	Single-Variable Calculus I
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MATH 1232	Single-Variable Calculus II
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MATH 2233	Multivariable Calculus
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MATH 2184	Linear Algebra I
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Advanced courses (46 credits)

MATH 3342	Ordinary Differential Equations
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PHYS 2151W	Intermediate Laboratory I: Techniques and Methods
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PHYS 2152	Intermediate Laboratory II: Instrumentation
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PHYS 3100	Math Methods for Physics
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PHYS 3161	Mechanics
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PHYS 3164	Thermal and Statistical Physics
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PHYS 3165	Electromagnetic Theory I
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PHYS 3166	Electromagnetic Theory II
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PHYS 3167	Principles of Quantum Physics
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PHYS 3181	Computational Physics
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PHYS 4195W	Physics Capstone
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PHYS 4196	Undergraduate Research in Biophysics
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or PHYS 4197	Undergraduate Research in Nuclear Physics
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or ASTR 4195	Undergraduate Research in Astrophysics
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PHYS 4200	Physics Symposium
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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/#text>), undergraduate students in Columbian College must complete a further, College-specific general education curriculum—Perspective, Analysis, Communication, or G-PAC (<http://bulletin.gwu.edu/arts-sciences/gpac/>). 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.

G-PAC approved courses, Dean's Seminars, and Sophomore Colloquia that may be available for registration are listed on the CCAS Advising website (<https://advising.columbian.gwu.edu/general-education-courses/>).

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

- Writing—one approved course in university writing and two approved writing in the disciplines (WID) courses.
- Humanities—one approved course in the humanities that involves critical or creative 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.

Coursework for the Columbian College general education curriculum is distributed as follows:

- Arts—one approved course in the arts 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.
- Humanities—one approved course in the humanities that involves critical thinking skills (in addition to the one course in this category required by the University General Education Requirement).
- Local or Civic Engagement—one approved course that develops the values, ethics, disciplines, and commitment to pursue responsible public action.
- Natural or Physical Science—one 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).
- Oral Communication—one course in oral communication.

Certain courses are approved to fulfill the requirement in more than one of these categories.

Courses taken in fulfillment of G-PAC also may 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.

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.