Physics

Degree Awarded

- Associate of Arts

Nature of Program

Following completion of an associate degree, there are two bachelor degree options for students in physics. The bachelor of science degree is for students wanting a career in research and is typically followed by graduate work in physics, materials science, astrophysics, or in other physical sciences. This bachelor of science degree program provides a comprehensive grounding in the fundamentals of physics and is usually accompanied by participation in research programs.

The bachelor of arts degree in physics is more flexible in that more free elective choices are available. The increased flexibility helps prepare a student for a career that combines a science background with subsequent professional training, such as secondary education or medical school.

The courses in physics provide a mix of theoretical concepts and practical examples. Each course within a degree plan builds upon the knowledge base acquired in previous courses and, together, these courses allow a student to acquire the combination of physical insight and mathematical skill needed for success in today's demanding job markets.

The associate degree program provides the first two years of undergraduate study for students planning to pursue a B.A. or B. S. Degree at West Virginia University or other comparable institutions.

Career Opportunities

Some graduates of the B.S. program accept positions in industry or in a government laboratory immediately, while many continue their education in graduate research programs. Career paths for physicists obtaining a B.A. degree may include secondary education, patent law, forensics, health physics, environmental engineering, journalism, government policy, and business management immediately or following further graduate training.

FACULTY

CHAIR

- Vicki Huffman - Ph.D. Biomedical Science

ASSOCIATE PROFESSOR

- Joan Vogtman - M.S. Applied Physics

General Education Foundations

Please use this link to view a list of courses that meet each GEF requirement. (http://registrar.wvu.edu/gef)

NOTE: Some major requirements will fulfill specific GEF requirements. Please see the curriculum requirements listed below for details on which GEFs you will need to select.

General Education Foundations		
F1 - Composition & Rhetoric		3-6
ENGL 101 & ENGL 102	Introduction to Composition and Rhetoric and Composition, Rhetoric, and Research	
or ENGL 103	Accelerated Academic Writing	
F2A/F2B - Science & Technology		4-6
F3 - Math & Quantitative Skills		3-4
F4 - Society & Connections		3
F5 - Human Inquiry & the Past		3
F6 - The Arts & Creativity		3
F7 - Global Studies & Diversity		3
F8 - Focus (may be satisfied by completion of a minor, double major, or dual degree)		9
Total Hours		31-37

Please note that not all of the GEF courses are offered at all campuses. Students should consult with their advisor or academic department regarding the GEF course offerings available at their campus.

Curriculum Requirements

GEF Requirements (4, 5, 6, and 7)		12
ENGL 101 & ENGL 102	Introduction to Composition and Rhetoric and Composition, Rhetoric, and Research (GEF 1)	6
MATH 155	Calculus 1 (GEF 3)	4
MATH 156	Calculus 2 (GEF 8)	4
MATH 251	Multivariable Calculus	4
MATH 261	Elementary Differential Equations	4
CHEM 115	Fundamentals of Chemistry (GEF 2)	4
CHEM 116	Fundamentals of Chemistry (GEF 8)	4
PHYS 111	General Physics (GEF 8)	4
PHYS 112	General Physics	4
WVUE 191	First Year Seminar	1
Electives		9
Total Hours		60

Suggested Plan of Study

First Year

Fall	Hours	Spring	Hours
ENGL 101 (GEF 1)	3	MATH 156 (GEF 8)	4
MATH 155 (GEF 3)	4	CHEM 116 (GEF 8)	4
CHEM 115 (GEF 2)	4	PHYS 111 (GEF 8)	4
WVUE 191	1	GEF Elective (GEF 5)	3
GEF Elective (GEF 4)	3		
	15		15

Second Year

Fall	Hours	Spring	Hours
ENGL 102 (GEF 1)	3	MATH 261	4
MATH 251	4	GEF Elective (GEF 6)	3
PHYS 112	4	GEF Elective (GEF 7)	3
Elective	3	Elective	3
		Elective	3
	14		16

Total credit hours: 60

Major Learning Outcomes

PHYSICS

Upon successful completion of an A.A. degree, physics majors will be able to:

1. Solve basic conceptual and quantitative problems in theoretical mechanics and electricity and magnetism.
2. Perform accurate measurements of physical systems and communicate the results and implications of those measurements in writing.
3. Use mathematical and chemical concepts to solve physics-related problems.
4. Transfer into a bachelor degree program in physics.