THE UNIVERSITY OF SCRANTON

COLLEGE OF ARTS & SCIENCES

PHYSICS

About the Program

Physics is the application of mathematical theory and experimental tools to investigate how matter and energy interact. It spans the spectrum from astrophysics, which tells us about the structure of stars, to clumps of atoms, which inform us how silicon chips work.

You won't find a physics department with more energy than here!

Outcomes & Opportunities

- Students collaborate with faculty and conduct research on everything from solar cells to image encryption. Recent students have obtained paid summer research experience at Cornell, Michigan State and The University of Scranton.
- Our physics majors typically go on to graduate school while others go straight into the industry and work at a wide range of companies and organizations.
- Some of the prestigious graduate schools that have admitted recent graduates include Boston University, Syracuse University, Columbia University and The George Washington University.
- There is a diverse range of careers for those with physics degrees, including astronomer, mechanical engineer, network applications systems analyst, physicist and software developer.
- Leading employers of Scranton graduates include the Department of Environmental Protection, the FBI, Lockheed Martin, NASA and Tobyhanna Army Depot.

Ranked #8 nationally for "Best Science Labs" by The Princeton Review

A CATHOLIC & JESUIT UNIVERSITY • FOUNDED IN 1888 •

SUCCESS AHEAD

admissions.scranton.edu/physics

PHYSICS CURRICULUM

	Department & Number - Descriptive Title of Course	Fall Cr.	Spr. Cr.
FIRST YEAR			
MAJOR	PHYS 140/PHYS 140L - (E) Elements of Physics I –		
	PHYS 141/PHYS 141L - (E) Elements of Physics II	4	4
COGNATE	MATH 103 - (Q) Pre-Calculus Mathematics[1] – MATH 114 - (Q) Calculus I		
	or MATH 114 - (Q) Calculus I – MATH 221 - Calculus II[2]	4	4
GE WRTG			
- GE HUMN	WRTG 107 - (FYW) Composition – HUMN ELECT - Humanities Elective	3	3
GE EP	PHYS 150 - (FYOC, FYDT) Foundations of Physics & Engineering	3	
GE PHIL - GE T/RS	PHIL 120 - Introduction to Philosophy –		
	T/RS 121 - (P) Theology I: Introduction to the Bible	3	3
GE FSEM	First Year Seminar[3]		
		17	14
SECOND YEAR			
MAJOR	PHYS 270/PHYS 270L - (W,EPW: Lab only) Elements of Modern Physics –		
	PHYS 352 - Statistical & Engineering Thermodynamics	4	3
COGNATE	EE 250/EE250L - Computational Tools for Physics & Engineering –		
	PHYS 260L - Electronics for Physicists	4	1
COGNATE	MATH 221 - Calculus II – MATH 222 - Calculus III or		
	MATH 222 - Calculus III – MATH 341 - Differential Equations	4	4
GE S/BH	S/BH ELECT - Social/Behavioral Electives	3	3
GE HUMN	HUMN ELECT - Humanities Elective		3
GE PHIL	PHIL 210 - Ethics		3
		15	17
THIRD YEAR			
MAJOR	PHYS 447 - Electromagnetics I –		
	PHYS 448/PHYS 448L - Electromagnetics II	3	4
MAJOR	PHYS 371 - Advanced Mechanics – PHYS 372 - Quantum Mechanics	3	3
MAJOR	PHYS 350 - Applied & Engineering Mathematics –		
	PHYS 333 - Experimental Methods in Physics	3	3
COGNATE/MAJOR	MATH 341 - Differential Equations or ELECT - Elective	3-4	
GE T/RS	T/RS 122 - (P) Theology II: Introduction to Christian Theology		3
GE PHIL or T/RS	PHIL ELECT - Philosophy Elective or T/RS ELECT – Theology Elective		3
GE HUMN	HUMN ELECT - Humanities Electives	3	
		15-16	16

	Department & Number - Descriptive Title of Course	Fall Cr.	Spr. Cr.
FOURTH YEAR			
MMAJOR	PHYS 493 - Undergraduate Physics Research I –		
	PHYS 494 - (EPW) Undergraduate Physics Research II	1	1
MAJOR	PHYS/EE - Physics/EE Electives		6
MAJOR	PHYS 473/PHYS 473L - Optics	4	
COGNATE	COGNATE ELECT - Cognate Elective	3	
GE HUMN	HUMN ELECT - Humanities Electives	3	3
GE ELECT	FREE ELECT - Free Electives	6	6
		17	16

Total: 127-128 Credits

CONTACT INFORMATION

Andrew Berger, Ph.D., *Chair, Department of Physics & Engineering*
Tel: 570.941.4056 • *Email:* wandrew.berger@scranton.edu

1.888.SCRANTON *or visit* **admissions.scranton.edu**

[1] *Physics majors starting with MATH 103 due to placement test results take one less Physics elective.*

[2] *Math Placement may affect the order in which these classes are taken.*

[3] *The selection of a First Year Seminar is likely to fulfill requirements both for the First Year Seminar and a General Education Requirement. Thus, the First Year Seminar will not add to the total credits for the semester. Talk with your advisor if you have any questions.*

Curriculum grid effective for the 2022-23 academic year in accordance with the undergraduate course catalog.