

## COLLEGE OF ARTS & SCIENCES

# BIOPHYSICS



Biophysics is an interdisciplinary science in which the principles and techniques of physics are applied to the study of living things and how they work. At Scranton, we will prepare you to tackle big problems facing society today, such as global warming, depleting water supplies and other significant issues.

### OUTCOMES & OPPORTUNITIES

- Students collaborate with faculty and conduct research on a wide range of topics. Recent students have obtained paid summer research experiences at Purdue University, the University of South Florida and Rutgers University.
- Biophysics graduates of Scranton work in a wide range of organizations as scientists, optometrists, teachers, engineers and a number of other roles.
- Leading employers of recent graduates include Geisinger Commonwealth School of Medicine, Goddard Earth Sciences Technology & Research (GESTAR), Penn Medicine Valley Forge and Thorlabs, Inc.
- Many of our biophysics majors continue on to graduate school, studying topics such as biomedical engineering, medical physics, biostatistics, medicine, optometry and atmospheric/oceanic science.
- Some graduate schools that have admitted recent graduates include Columbia University, Carnegie Mellon University, Johns Hopkins University and the University of Pennsylvania.

### CONTACT INFORMATION

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+ [admissions.scranton.edu/biophysics](http://admissions.scranton.edu/biophysics)

# BIOPHYSICS CURRICULUM

	Department & Number - Descriptive Title of Course	Fall Cr.	Spr. Cr.
<b>FIRST YEAR</b>			
MAJOR	PHYS 140/PHYS 140L - (E) Elements of Physics I – PHYS 141/PHYS 141L - (E) Elements of Physics II	4	4
MAJOR	BIOL 141/BIOL 141L (E) (FYOC, FYDT Lab only) General Biology – BIOL 142/BIOL142L (E) (FYOC, FYDT Lab only) General Biology <sup>1</sup>	4.5	4.5
COGNATE	MATH 103 - (Q) Pre-Calculus Mathematics – MATH 114 - (Q) Calculus I or MATH 114 - (Q) Calculus I – MATH 221 - (Q) Calculus II <sup>2</sup>	4	4
GE WRITG	WRITG 107 - (FYW) Composition	3	
GE T/RS	T/RS 121 (P) Theology I: Introduction to the Bible		3
GE FSEM	First Year Seminar <sup>3</sup>		
		<b>15.5</b>	<b>15.5</b>
<b>SECOND YEAR</b>			
MAJOR	PHYS 270/PHYS 270L - (W) Elements of Modern Physics – PHYS 352 - Statistical and Engineering Thermodynamics	4	3
MAJOR	CHEM 112-113 - (E) General and Analytical Chemistry /CHEM 112L-113L	4.5	4.5
COGNATE	EE 241/EE 241L - (EPW) Circuit Analysis		4
COGNATE	CMPS 134 - Computer Science I/ CMPS 134L - Computer Science I Lab	4	
COGNATE	MATH 221 - (Q) Calculus II – MATH 222 - (Q) Calculus III or MATH 222 - (Q) Calculus III – MATH 341 - Differential Equations	4	4
GE PHIL	PHIL 120 - Introduction to Philosophy	3	
		<b>19.5</b>	<b>15.5</b>
<b>THIRD YEAR</b>			
MAJOR	PHYS/BIOL/CHEM ELECT – Physics, Biology or Chemistry Elective	3	
MAJOR	CHEM 232/CHEM 232L (E) Organic Chemistry – CHEM 233/CHEM 233L (E) Organic Chemistry	4.5	4.5
GE T/RS	T/RS 122 - (P) Theology II: Introduction to Christian Theology	3	
GE PHIL	PHIL 210 - Ethics	3	
GE PHIL or T/RS	PHIL ELECT - Philosophy Elective or T/RS ELECT Theology Elective		3
GE S/BH	S/BH ELECT – Social/Behavioral Electives	3	3
GE HUMN	HUMN ELECT – Humanities Elective		3
		<b>16.5</b>	<b>13.5</b>

	Department & Number - Descriptive Title of Course	Fall Cr.	Spr. Cr.
<b>FOURTH YEAR</b>			
MAJOR	PHYS/BIOL/CHEM ELECT – Physics, Biology or Chemistry Electives <sup>4</sup>	6	6
GE HUMN	HUMN ELECT – Humanities Electives	6	3
GE ELECT	FREE ELECT – Free Electives	3	6
		<b>15</b>	<b>15</b>
<b>Total: 126 Credits</b>			



<sup>1</sup> EP requirement is met through successful completion of BIOL 141L and BIOL 142L.

<sup>2</sup> Math placement may affect the order in which these classes are taken.

<sup>3</sup> 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.

<sup>4</sup> Recommended PHYS 493 - PHYS 494.