

# BACHELOR OF SCIENCE IN PHYSICS

The undergraduate physics program provides an excellent preparation for graduate study in physics, as well as strong background for success in other professions, including law (patent and intellectual property), health physics, business, entrepreneurship, medicine, and research in other areas of science.

The rigorous interdisciplinary nature of the program prepares graduates with an understanding of how physics is interrelated

with biology, chemistry, computational sciences, and engineering. Graduates also are prepared for immediate entry into positions in industrial, medical, and other research laboratories, and for graduate study in areas such as biophysics, condensed matter physics, or high energy physics.

## Required Courses

Code	Title	Credit Hours
<b>Physics Requirements</b>		<b>(53)</b>
PHYS 100	Intro to the Profession	2
PHYS 123	General Physics I: Mechanics	4
PHYS 221	Gen Physics II: Elect&Magntism	4
PHYS 223	General Physics III	4
PHYS 240	Computational Science	3
PHYS 300	Instrumentation Lab	4
PHYS 301	Math Methods of Physics	3
PHYS 304	Thermodynamics&Statistical Phys	3
PHYS 308	Classical Mechanics I	3
PHYS 309	Classical Mechanics II	3
PHYS 405	Fndmntls of Quantum Theory I	3
PHYS 406	Fndmntls of Quantum Theory II	3
PHYS 413	Electromagnetism I	3
PHYS 414	Electromagnetism II	3
PHYS 427	Advanced Physics Lab I	3
PHYS 440	Computational Physics	3
PHYS 485	Physics Colloquium	1
PHYS 485	Physics Colloquium	1
<b>Technical Elective Requirement</b>		<b>(3)</b>
Select 3 credit hours <sup>1</sup>		3
<b>Mathematics Requirements</b>		<b>(18)</b>
MATH 151	Calculus I	5
MATH 152	Calculus II	5
MATH 251	Multivariate & Vector Calculus	4
MATH 252	Introduction to Diff Equations	4
<b>Mathematics Elective</b>		<b>(3)</b>
Select three credit hours		3
<b>Chemistry Requirements</b>		<b>(8)</b>
CHEM 124	Princ of Chemistry I with Lab	4
CHEM 125	Prin of Chemistry II w/Lab	4
<b>Computer Science Requirement</b>		<b>(2)</b>
CS 105	Intro to Computer Programming	2
or CS 115	Object-Oriented Programming I	
<b>Humanities and Social Science Requirements</b>		<b>(21)</b>
See Illinois Tech Core Curriculum, sections B and C		21
<b>Interprofessional Projects (IPRO)</b>		<b>(6)</b>
See Illinois Tech Core Curriculum, section E		6
<b>Free Electives</b>		<b>(12)</b>
Select 12 credit hours		12
<b>Total Credit Hours</b>		<b>126</b>

- <sup>1</sup> A technical elective is:
1. Any Physics course at or above the 300-level

OR

2. Any College of Science or College of Engineering course at or above the 300-level, chosen with approval of the student's advisor

## Bachelor of Science in Physics Curriculum

		Year 1	
Semester 1	Credit Hours	Semester 2	Credit Hours
PHYS 100	2	PHYS 221	4
PHYS 123	4	CHEM 125	4
CHEM 124	4	MATH 152	5
MATH 151	5	Humanities or Social Sciences Elective	3
15		16	

		Year 2	
Semester 1	Credit Hours	Semester 2	Credit Hours
PHYS 223	4	PHYS 240	3
MATH 251	4	PHYS 304	3
CS 105 or 115	2	MATH 252	4
Social Sciences Elective	3	Social Sciences Elective (300+)	3
Humanities 200-level Course	3	Social Sciences Elective (300+)	3
16		16	

		Year 3	
Semester 1	Credit Hours	Semester 2	Credit Hours
PHYS 300	4	PHYS 309	3
PHYS 301	3	PHYS 406	3
PHYS 308	3	Technical Elective <sup>1</sup>	3
PHYS 405	3	I PRO Elective I	3
Humanities Elective (300+)	3	Free Elective	3
16		15	

		Year 4	
Semester 1	Credit Hours	Semester 2	Credit Hours
PHYS 413	3	PHYS 414	3
PHYS 427	3	PHYS 440	3
PHYS 485	1	PHYS 485	1
I PRO Elective II	3	Math Elective, 300-level or above	3
Humanities Elective (300+)	3	Free Elective	3
Free Elective	3	Free Elective	3
16		16	

Total Credit Hours: 126

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1. Any Physics course at or above the 300-level

OR

2. Any College of Science or College of Engineering course at or above the 300-level, chosen with approval of the student's advisor