

Date Submitted: 02/25/26 1:47 pm

Viewing: **BS-PHYS-3 : Bachelor of Science in Physics**

Last approved: 10/07/24 10:37 am

Last edit: 02/25/26 1:47 pm

Changes proposed by: segre

Catalog Pages
Using this Program
[Bachelor of Science in Physics](#)

Program Status	Active		
Requestor	Name	Carlo Segre	E-mail
	segre@iit.edu		
Origination Date	<u>2026-2-25</u> 2024-4-23		
Is this an interdisciplinary program?	No		
Is this an incubator program?			
Is this stem-eligible?	<u>Yes</u>		
Available for direct application?	<u>Yes</u>		
Academic Unit	Physics		
College	Lewis College of Science and Letters		
Program Title	Bachelor of Science in Physics		
Effective Academic Year	<u>2026</u> 2024 - <u>2027</u>	Effective Term	Fall 2026
Academic Level	Undergraduate		

In Workflow

1. PHYS Chair
2. Academic Affairs
3. Undergraduate Academic Affairs
4. LS Dean
5. Undergraduate Studies Committee Chair
6. Faculty Council Chair
7. Academic Affairs

Approval Path

1. 03/06/26 1:14 pm
Pavel Snopok (psnopok):
Approved for PHYS Chair
2. 03/09/26 3:13 pm
Ayesha Qamer (aqamer): Approved for Academic Affairs
3. 03/09/26 4:00 pm
Joseph Gorzkowski (jgorzkow):
Approved for Undergraduate Academic Affairs
4. 03/12/26 10:37 am
Jennifer deWinter (jdewinter):
Approved for LS Dean

History

1. Oct 25, 2017 by clmig-jwehrheim
2. Nov 8, 2017 by Sarah Pariseau (sparisea)

3. Feb 13, 2018 by Sally Laurent-Muehleisen (slaurent)
4. Apr 27, 2018 by Sarah Pariseau (sparisea)
5. Dec 24, 2019 by Sally Laurent-Muehleisen (slaurent)
6. Oct 23, 2020 by Holli Pryor-Harris (pryor)
7. Oct 7, 2024 by Carlo Segre (segre)

If all courses in a subject in your department are required, please enter each subject followed by the number ranges in the "Quick Add" field in the pop up box when you click the green plus button below. For example: ARCH 100-499.

What courses will factor the major GPA?

Program Type Degree
Degree Type Bachelor of Science (BS)

CIP Code
40.0801 - Physics, General.

Is there more than one Academic Unit proposer?

No

Program Code BS-PHYS-3

Program Attribute

Total Program 120
Credit Hours

Please provide a summary and rationale for the requested program revision.

[02/16/2026 -- These changes make the Physics degree more flexible and add an additional 3 credit hours of Free Electives. The specific changes are as follows:](#)

1. Drop the CS 105 requirement (since PHYS 240 satisfies the Computer Science General Education requirement) and the CHEM 125 requirement and replacing the 6 credit hours with 3 credit hours of PHYS electives and 3 credit hours of Free Electives
2. Drop PHYS 440 as a requirement and add 3 credit hours of PHYS Electives.

10/07/2024 -- We are dropping PHYS 348 (Modern Physics for Scientists and Engineers) as a required course for all our departmental majors (as well as the Physics minor). The material in PHYS 348 is covered completely in the combination of PHYS 223/224, PHYS 304, and PHYS 405 (all required classes) making the material in PHYS 348 redundant. Having PHYS 348 as part of our required curriculum is therefore not necessary and effectively serves as a hindrance in its current role as the gatekeeper for all higher level physics classes. Replacing PHYS 348 with a Technical Elective (defined below) will better serve our Physics majors.

10/23/2020 Updated program iteration code and effective CAT year/term for College Reorg.
HPH

04/20/2024 - We are dropping the MATH Elective and the Technical Elective to reduce the total credit hours to 120.

Program Narrative and Justification

Narrative description of how the institution determined the need for the program. For example, describe what need this program will address and how the institution became aware of that need. If the program is replacing a current program(s), identify the current program(s) that is being replaced by the new program(s) and provide details describing the benefits of the new program(s). If the program will be offered in connection with, or in response to, an initiative by a governmental entity, provide details of that initiative.

Narrative description of how the program was designed to meet local market needs, or for an online program, regional or national market needs. For example, indicate if Bureau of Labor Statistics data or State labor data systems information was used, and/or if State, regional, or local workforce agencies were consulted. Include how the course content, program length, academic level, admission requirements, and prerequisites were decided; including information received from potential employers about course content; and information regarding the target students and employers.

Narrative description of any wage analysis the institution may have performed, including any consideration of Bureau of Labor Statistics wage data related to the new program.

Narrative description of how the program was reviewed or approved by, or developed in conjunction with, one or more of the following: a) business advisory committees; b) program integrity boards; c) public or private oversight or regulatory agencies (not including the state licensing/authorization agency and accrediting agency); and d) businesses that would likely employ graduates of the program. For example, describe the steps taken to develop the program, identify when and with whom discussions were held, provide relevant details of any proposals or correspondence generated, and/or describe any process used to evaluate the program.

Admission Entry Details

What are the enrollment estimates?

Year 1

Year 2

Year 3

Attach Additional
Program
Justification
Document(s)

Academic Information

Advising

Since quality advising is a key component of good retention, graduation, and career placement, how will students be mentored? What student professional organizations will be formed? How will the department work with the Career Services office to develop industry connections?

Program Resources

Which program
resources are
necessary to offer
this program?

Proposed Catalog Entry

Admission
Requirements

Course Requirements

Required Courses

Physics Requirements		(50)
PHYS 100	Intro to the Profession	2
PHYS 123	General Physics I: Mechanics	4
PHYS 221	General Physics II: Electricity and Magnetism	4
PHYS 223	General Physics III	4
PHYS 240	Computational Science	3
PHYS 300	Instrumentation Laboratory	4
PHYS 301	Mathematical Methods of Physics	3
PHYS 304	Thermodynamics and Statistical Physics	3
PHYS 308	Classical Mechanics I	3
PHYS 309	Classical Mechanics II	3
PHYS 405	Fundamentals of Quantum Theory I	3
PHYS 406	Fundamentals of Quantum Theory II	3
PHYS 413	Electromagnetism I	3
PHYS 414	Electromagnetism II	3
PHYS 427	Advanced Physics Laboratory I	3
PHYS 440	Computational Physics	3
PHYS 485	Physics Colloquium	1
PHYS 485	Physics Colloquium	1
Physics Electives		(6)
CS 105	Introduction to Computer Programming	2
or CS 115	Object-Oriented Programming†	
<u>Select 6 credit hours of PHYS 300+</u>		<u>6</u>
Mathematics Requirements		(18)
MATH 151	Calculus I	5
MATH 152	Calculus II	5
MATH 251	Multivariate and Vector Calculus	4
MATH 252	Introduction to Differential Equations	4
Chemistry Requirements		(4)

CHEM 124	Principles of Chemistry I with Laboratory	4
CHEM 125	Principles of Chemistry II with Laboratory	4
Humanities and Social Science Requirements		(21)
See Illinois Tech Core Curriculum, sections B and C		21
Interprofessional Projects (IPRO)		(6)
See Illinois Tech Core Curriculum, section E		6
Free Electives		(15)
Select 12 credit hours		12
Select 15 credit hours		15
Total Credit Hours		120

Sample
Curriculum/Program
Requirements

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 200-level Course	3
		Social Sciences Elective	3
	15		15
			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 Elective (300+)	3	Humanities Elective	3
	14		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	IPRO Elective I	3
PHYS 405	3	Humanities Elective (300+)	3

Free Elective

3
16

Free Elective

3
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

Physics Elective

3

Physics Elective

3

IPRO Elective II

3

Free Elective

3

Free Elective

3

Free Elective

3

16

13

Total Credit Hours: 120

Specialization
Requirements

Program Outcomes and Assessment Process

What are your learning objectives in this program? Please list each learning objective in the boxes below:

Note: These should be the same as described in your assessment plan at the bottom of this form.

Upload your
assessment plan
here:

Undergraduate Program Requirements

What courses will factor the major GPA?

Undergraduate Degree Requirements

Minimum credit hours 120

Specialization required?
No

Minor required?
No

Proposed General Curriculum

List Major Course Requirements

List Mathematics Requirements

List Science Requirements

List Computer Science Requirements

List Humanities and Social Sciences Requirements

List Interprofessional Project (IPRO) Requirements

List Technical Elective Course Options

List Free Elective Credit Hours (if 12

applicable)

Semester-by-
semester plan of
study for the
degree program

Report to Faculty
Council

Reviewer
Comments

Key: 46

