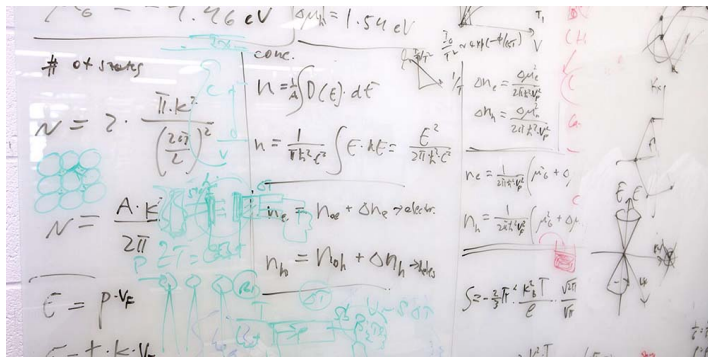


# PHYSICS (BA)



This program was approved for students entering the university in the Summer 2019–Spring 2020 catalog year. For more information about catalog year, go to Catalog Year Information (<http://catalog.louisville.edu/undergraduate/university-wide-unit-specific-policies/catalog-year>).

## Bachelor of Arts in Physics

Unit: College of Arts and Sciences (AS) (<http://www.louisville.edu/a-s>)  
Department: Physics and Astronomy (<http://www.physics.louisville.edu>)  
Academic Plan Code(s): PHYSBA

## Program Information

The Bachelor of Arts (BA) degree in Physics is designed for substantial pre-professional education for such fields as medicine, patent law, teaching, technical writing, and technical sales. Students preparing for secondary school science teaching may choose electives to help fulfill teaching certification requirements.

Completion of this degree requires work to be submitted for the department's Learning Outcomes Measurement. For details, contact the department.

## Degree Summary

Code	Title	Hours
	General Education Requirements ( <a href="http://catalog.louisville.edu/undergraduate/general-education-requirements">http://catalog.louisville.edu/undergraduate/general-education-requirements</a> ) <sup>1</sup>	31
	College/School Requirements	22
	Program/Major Requirements <sup>1</sup>	68
	Minimum Total Hours	121

<sup>1</sup> Some credit hours from the General Education Requirements may be satisfied by courses defined by the program, in which case additional electives will be required to complete the minimum hours for the degree. See the Degree Requirements tab for specific coursework.

Specific coursework information can be found on the Degree Requirements tab.

## Departmental Admission Requirements

There are no specific admission requirements for this degree plan.

The Application for Major form can be found on the Arts & Sciences Advising Center website (<http://louisville.edu/artsandsciences/advising/apply>).

## General Education Requirements

Code	Title	Hours
	General Education Requirements ( <a href="http://catalog.louisville.edu/undergraduate/general-education-requirements">http://catalog.louisville.edu/undergraduate/general-education-requirements</a> ) <sup>1</sup>	31
The following courses are required by the program and can be taken to fulfill the respective General Education Requirement:		
CHEM 201	General Chemistry I - S or BIOL 240 Unity of Life - S	
MATH 205	Calculus I - QR	
PHYS 298	Introductory Mechanics, Heat and Sound - S	
PHYS 295	Introductory Laboratories I - SL	
	Minimum Total Hours	31

All degrees require the completion of the University-wide General Education Program (link provided above). Some General Education requirements may be met in the requirements for the major or supporting coursework, in which case additional electives may be required to complete the minimum hours for the degree.

## College/School Requirements

Code	Title	Hours
<b>Arts &amp; Sciences Requirements</b>		
GEN 100	Student Success Center Orientation or GEN 101 Arts and Sciences Orientation	1
	Foreign Language <sup>2</sup>	12
	Electives in Humanities or Social Sciences <sup>3</sup>	9
	WR—two approved courses at the 300 level or above <sup>4</sup>	
	Minimum Total Hours	22

## Program/Major Requirements

Code	Title	Hours
<b>Department of Physics</b>		
PHYS 295	Introductory Laboratories I - SL	1
PHYS 296	Introductory Laboratories II - SL	1
PHYS 301	Introductory Modern Physics Laboratory	1
PHYS 298	Introductory Mechanics, Heat and Sound - S	4
PHYS 299	Introductory Electricity, Magnetism and Light	4
PHYS 300	Introductory Modern Physics	3
PHYS 350	Differential Equations for the Physical Sciences	4
PHYS 460	Mechanics	3
PHYS 530	Thermal Physics	3
	Select one of the following:	3
PHYS 430	Practicum in Physics Education - CUE	
PHYS 496	Senior Seminar in Physics - CUE, WR	
PHYS 497	Senior Thesis in Physics - CUE, WR	
PHYS 499	Cooperative Internship in Physics - CUE	
	PHYS electives at the 300 level or above	6
<b>Supporting Courses</b>		
MATH 205	Calculus I - QR	4
MATH 206	Calculus II	4
MATH 301	Calculus III	4
CHEM 201	General Chemistry I - S	3
CHEM 202	General Chemistry II - S	3

CHEM 207	Introduction to Chemical Analysis I - SL	1
CHEM 208	Introduction to Chemical Analysis II - SL	1
CHEM 209	Introduction to Chemical Analysis III	1
BIOL 240 & BIOL 244	Unity of Life - S Principles of Biology Laboratory - SL	5
GEOS 301	Geology for Scientists and Engineers	3
Minimum Electives <sup>1</sup>		6
Minimum Total Hours		68

Code	Title	Hours
<b>Minimum Hours Required for Degree</b>		121

Only 40 hours in the major department may be applied toward the Bachelor of Arts Degree.

At least 50 of the total minimum hours required must be at the 300 level or above.

Code	Title	Hours
<b>Culminating Undergraduate Experience (Graduation requirement)</b>		

Requirement fulfilled by completing one of the following:

PHYS 430	Practicum in Physics Education - CUE	
PHYS 496	Senior Seminar in Physics - CUE, WR	
PHYS 497	Senior Thesis in Physics - CUE, WR	
PHYS 499	Cooperative Internship in Physics - CUE	

- <sup>1</sup> Ten credit hours from the General Education Requirements may be satisfied by courses defined by the program, in which case additional electives will be required to complete the minimum hours for the degree.
- <sup>2</sup> Completion of the intermediate level of a single foreign language.
- <sup>3</sup> In addition to courses counted toward General Education, 6 hours must be at the 300 level or above.
- <sup>4</sup> May be incorporated into other degree requirements.

## Flight Plan

Course	Title	Hours
<b>Year 1</b>		
<b>Fall</b>		
GEN 100 or GEN 101	Student Success Center Orientation or Arts and Sciences Orientation	1
ENGL 101	Introduction to College Writing - WC	3
MATH 205	Calculus I - QR	4
PHYS 298	Introductory Mechanics, Heat and Sound - S	4
PHYS 295	Introductory Laboratories I - SL	1
General Education: Cardinal Core Oral Communication - OC		3
Hours		16
<b>Spring</b>		
MATH 206	Calculus II	4
PHYS 299	Introductory Electricity, Magnetism and Light	4
PHYS 296	Introductory Laboratories II - SL	1
CHEM 201	General Chemistry I - S	3
CHEM 207	Introduction to Chemical Analysis I - SL	1
CHEM 208	Introduction to Chemical Analysis II - SL	1
ENGL 102	Intermediate College Writing - WC	3
Hours		17
<b>Year 2</b>		
<b>Fall</b>		
MATH 301	Calculus III	4

PHYS 300	Introductory Modern Physics	3
PHYS 301	Introductory Modern Physics Laboratory	1
CHEM 202	General Chemistry II - S	3
CHEM 209	Introduction to Chemical Analysis III	1
Foreign Language 1		4
Hours		16

<b>Spring</b>		
BIOL 240	Unity of Life - S	3
General Education: Cardinal Core Social & Behavioral Sciences US Diversity - SBD1		3
General Education: Cardinal Core Arts & Humanities - AH		3
General Elective (300 level or above)		3
Foreign Language 2		4
Hours		16

<b>Year 3</b>		
<b>Fall</b>		
PHYS 350	Differential Equations for the Physical Sciences	4
Physics Elective (300 level or above)		3
Foreign Language 3		4
General Education: Cardinal Core Social & Behavioral Sciences Historical Perspective - SBH		3
Humanities or Social Science Elective (300 level or above)		3
BIOL 244	Principles of Biology Laboratory - SL	2
Hours		19

<b>Spring</b>		
GEOS 301	Geology for Scientists and Engineers	3
PHYS 460	Mechanics	3
Foreign Language 4 (if needed) or General Elective		3
Physics Elective (300 level or above)		3
Humanities or Social Science WR elective (300 level or above)		3
Hours		15

<b>Year 4</b>		
<b>Fall</b>		
PHYS 541	Electromagnetic Fields	3
Select one of the following:		3
PHYS 430	Practicum in Physics Education - CUE	
PHYS 496	Senior Seminar in Physics - CUE, WR	
PHYS 497	Senior Thesis in Physics - CUE, WR	
PHYS 499	Cooperative Internship in Physics - CUE	
Humanities or Social Science WR Elective (300 level or above)		3
General Elective (300 level or above)		3
Hours		12

<b>Spring</b>		
General Education: Cardinal Core Arts & Humanities Global Diversity - AHD2		3
General Elective		3
General Elective (300 level or above)		2
General Elective (300 level or above)		3
PHYS 530	Thermal Physics	3
Hours		14
Minimum Total Hours		125

### Degree Audit Report

Degree Audit reports illustrate how your completed courses fulfill the requirements of your academic plan. What-if reports allow you to compare the courses you have completed in your current academic plan to the courses required in another academic plan. Should you have questions about either report, please consult with your academic advisor.

### To create either report:

1. Log into your ULink account.
2. Click on the Student Services tab.

3. Next, click on "View my Academic Advisement Report" to run a Degree Audit report in the Undergraduate Advising area.
4. To create a What-if report, click on "Create a What-if Advisement Report."

Click here to run a Degree Audit report, or create a What-if report. (<https://ulink.louisville.edu>)

#### **Flight Planner**

Based on your major, the Flight Planner tool may be available for you to create a personalized Flight Plan. The Flight Planner can be found in the ULink Student Center. Consult with your advisor for assistance with the Flight Planner.