

PHYSICS B.A.

Bachelor of Arts - Physics

College of Humanities & Sciences

Degree Specific Credits: 68

Required Cumulative GPA: 2.0

Catalog Year: 2018-2019

General Education Requirements

Information regarding these requirements can be found in the General Education Section (<http://catalog.umd.edu/academics/general-education-requirements>) of the catalog.

Summary

Code	Title	Hours
	Lower-Division Physics	10
	Upper-Division Physics	30
	Physics Electives	6
	Math Requirements	16
	Computer Science Requirements	3
	Advanced College Writing Requirement	3
	Teaching Physics Track	
	Total Hours	68

Lower-Division Physics

Code	Title	Hours
	Complete one of the following Physics sequences:	10
	Algebra- and Trigonometry-based Physics:	
PHSX 205N & PHSX 206N	College Physics I and College Physics I Laboratory	
PHSX 207N & PHSX 208N	College Physics II and College Physics II Laboratory	
	Calculus-based Physics (strongly recommended):	
PHSX 215N & PHSX 216N	Fund of Physics w/Calc I and Physics Laboratory I w/Calc	
PHSX 217N & PHSX 218N	Fund of Physics w/Calc II and Physics Laboratory II w/Calc	
	Total Hours	10

Minimum Required Grade: C-

Upper-Division Physics

Code	Title	Hours
	Complete all of the following courses:	
PHSX 301	Intro Theoretical Physics	3
PHSX 311	Oscillations and Waves	2
PHSX 320	Classical Mechanics	3
PHSX 323	Intermediate Physics Lab	3
PHSX 343	Modern Physics	3
PHSX 423	Electricity & Magnetism I	3

PHSX 444	Advanced Physics Lab	3
PHSX 461	Quantum Mechanics I	3
PHSX 499	Senior Capstone Seminar	1
	Complete two of the following courses:	6
PHSX 425	Electricity & Magnetism II	
PHSX 446	Thermodyn & Stat Mech	
PHSX 462	Quantum Mechanics II	
	Total Hours	30

Minimum Required Grade: C-

Physics Electives

Note: Other PHSX courses may be substituted with adviser approval.

Code	Title	Hours
	Complete two of the following courses:	6
PHSX 141N or ASTR 142	Einstein's Relativity The Evolving Universe	
PHSX 327	Optics	
PHSX 330	Communicating Physics	
PHSX 333	Computational Physics	
PHSX 425	Electricity & Magnetism II (2 of these 3 courses must be taken in the physics core, the remaining course can be used as an elective)	
	or PHSX 446 Thermodyn & Stat Mech	
	or PHSX 462 Quantum Mechanics II	
	Total Hours	6

Minimum Required Grade: C-

Math Requirements

Note: M 317, M 412, and M 418 are recommended as well

Code	Title	Hours
	Complete all of the following courses:	
M 171	Calculus I	4
M 172	Calculus II	4
M 221	Introduction to Linear Algebra	4
M 273	Multivariable Calculus	4
	Total Hours	16

Minimum Required Grade: C-

Computer Science Requirements

Code	Title	Hours
	Complete one of the following courses:	3
CSCI 100	Intro to Programming	
CSCI 135	Fund of Computer Science I	
PHSX 333	Computational Physics (strongly recommended)	
	Total Hours	3

Minimum Required Grade: C-

Advanced College Writing Requirement

Note: May substitute another advanced writing course as approved by the department chair.

Code	Title	Hours
Complete the following course:		
PHSX 330	Communicating Physics	3
Total Hours		3

Minimum Required Grade: C-

Teaching Physics Track

Notes:

- This teaching track contains different/additional course requirements designed to meet state standards. Those interested in teaching in K-12 schools must complete the teaching track of a major in a teaching content area plus the Teacher Education Program through the Department of Teaching and Learning. Additional teaching areas can be added through completion of the teaching track of a major or minor in that content area.
 - Secondary Education Licensure Program (<http://www.coehs.umt.edu/departments/currinst/undergradprograms/seced/default.php>)
 - Licensure Degree Requirements (<http://catalog.umt.edu/colleges-schools-programs/education-human-sciences/teaching-learning/lic-secondary-licensure>)
- To complete this teaching track, you need to contact the Teaching and Learning Department. You do not fill out a major/minor form for graduation or the major/minor/concentration section of the major change form. Approvals for this track must come from the Teaching and Learning Department.
- Tracks will not appear on your UM transcript, diploma, university lists, student data system, or university publications. They are used for advising purposes only. You do not fill out a major change for a track.

Teaching Physics Track Requirement

Note: The EDU 497 course number is used for multiple courses. Students should register for EDU 497 Methods: 5-12 Science.

Code	Title	Hours
Complete the following course:		
EDU 497	Teaching and Assessing	4
Total Hours		4

Minimum Required Grade: C-

Secondary Teaching Licensure

Note: For endorsement to teach physics, a student also must gain admission to the Teacher Education Program and meet all the requirements for secondary teaching licensure (<http://catalog.umt.edu/colleges-schools-programs/education-human-sciences/teaching-learning/lic-secondary-licensure>). For more information, see the Teaching and Learning Department (<http://catalog.umt.edu/colleges-schools-programs/education-human-sciences/teaching-learning>).