PHYSICS B.A. - TEACHING BROADFIELD SCIENCE

Individuals interested in teaching in K-12 schools must complete a degree in the content area they want to teach plus the Teacher Education Program through the Department of Teaching and Learning. Individuals must complete the teaching track within that degree program, which may contain different course requirements than the non-teaching track since the sequence of courses is designed to meet state standards. Upon completion of the degree program with the teaching track and the secondary licensure program, one will be eligible for a standard Montana teaching license in this content area.

- Secondary Education Licensure Program (https://www.umt.edu/education/departments/teaching-and-learning/tep/)
- Licensure Degree Requirements (https://catalog.umt.edu/colleges-schools-programs/education/teaching-learning/lic-secondary-licensure/)

General Degree Requirements

To earn a baccalaureate degree, all students must complete successfully, in addition to any other requirements, the University of Montana General Education Requirements. Please refer to the General Education Requirements page (https://catalog.umt.edu/academics/general-education-requirements/) for more information.

Additional requirements for graduation can be found on the Degree/Certificate Requirements for Graduation page (https://catalog.umt.edu/academics/graduation-requirements/).

Unless otherwise noted in individual program requirements, a minimum grade point average of 2.00 in all work attempted at the University of Montana-Missoula is required for graduation. Please see the Academic Policies and Procedures page (https://catalog.umt.edu/academics/policies-procedures/) for information on how your GPA is calculated.

Courses taken to satisfy the requirements of a major, minor, or certificate program must be completed with a grade of C- or better unless a higher grade is noted in the program requirements.

Bachelor of Arts - Physics; Broadfield Teaching Science Concentration

- Students must be formally admitted to the Teacher Education Program and complete all of the professional education licensure requirements. See the Department of Teaching and Learning in the College of Education for more information.
- A major GPA of 2.75 is required to be eligible for student teaching.

Course Requirements

Code	Title	Hours
Required Physics Courses		
Complete all of the following courses:		
PHSX 215N	Fundamentals of Physics with Calculus I	4
PHSX 216N	Physics Laboratory I with Calculus	1
PHSX 217N	Fundamentals of Physics with Calculus II	4
PHSX 218N	Physics Laboratory II with Calculus	1
PHSX 301	Intro to Theoretical Physics	3
PHSX 311	Oscillations and Waves	2
PHSX 330	Communicating Physics	3
PHSX 343	Modern Physics	3
Physics Elective		
Complete 1 additional upper-division Physics course.		3
Math Requirements		
Complete all of the following courses:		
M 171	Calculus I	4
M 172	Calculus II	4
M 273	Multivariable Calculus	4
M 274	Introduction to Differential Equations	4
Statistics Requirement		
Complete one of the following courses:		3-4
STAT 216	Introduction to Statistics	
STAT 342	Probability and Simulation	
Astronomy Requirements		
Complete all of the following courses:		
ASTR 131N	Planetary Astronomy	3
ASTR 134N	Planetary Astronomy Lab	1
Geology Requirements		
Complete all of the following courses:		
GEO 101N	Introduction to Physical Geology	3
GEO 102N	Introduction to Physical Geology Lab	1
ASTR 351	Planetary and Exoplanet Science	3
or GEO 105N	Oceanography	
Biology Requirements		
Complete all of the following courses:		
BIOB 160	Principles of Living Systems	3
BIOB 161N	Principles of Living Systems Lab	1
BIOB 260	Cellular and Molecular Biology	4
BIOB 272	Genetics and Evolution	4
Chemistry Requirements		
Complete all of the following courses:		
CHMY 141N	College Chemistry I	4
CHMY 142N	College Chemistry I Lab	1
CHMY 143N	College Chemistry II	4
CHMY 144N	College Chemistry II Lab	1
CHMY 485	Laboratory Safety	1
Advanced Writing Requirement		
Complete the following course:		
PHSX 330	Communicating Physics	3
Teaching Methods Requirement		
Complete the following course:		
EDU 497	Teaching and Assessing (Methods: 5-12 Science)	3
Total Hours		**83-84**

Secondary Teaching Licensure

For endorsement to teach this subject, a student also must gain admission to the Teacher Education Program and meet all the requirements for secondary teaching licensure (https://catalog.umt.edu/colleges-schools-programs/education/teaching-learning/lic-secondary-licensure/). For more information, see the Teaching and Learning

Department webpage (https://www.umt.edu/education/departments/currinst/default.php).

Four Year Plan

Course	Title	Hours
Freshman		
Autumn		
PHSX 215N & PHSX 216N	Fundamentals of Physics with Calculus I and Physics Laboratory I with Calculus	5
M 171	Calculus I	4
PHSX 101	The Physics Experience	1
ASTR 131N & ASTR 134N	Planetary Astronomy and Planetary Astronomy Lab	4
HUSC 194	Seminar/Workshop	1
	Hours	**15**
Spring		
PHSX 217N & PHSX 218N	Fundamentals of Physics with Calculus II and Physics Laboratory II with Calculus	5
M 172	Calculus II	4
WRIT 101	College Writing I	4
General Education Requirement		3
	Hours	**16**
Sophomore		
Autumn		
PHSX 311	Oscillations and Waves	2
PHSX 343	Modern Physics	3
M 273	Multivariable Calculus	4
ASTR 351	Planetary and Exoplanet Science	3
BIOB 160 & BIOB 161N	Principles of Living Systems and Principles of Living Systems Lab	4
	Hours	**16**
Spring		
PHSX 301	Intro to Theoretical Physics	3
PHSX 330	Communicating Physics	3
M 311		4
STAT 342	Probability and Simulation	3
General Education Requirement		3
	Hours	**16**
Junior		
Autumn		
CHMY 141N & CHMY 142N	College Chemistry I and College Chemistry I Lab	5
BIOB 260	Cellular and Molecular Biology	4
General Education Requirement		4
Elective		3
	Hours	**16**
Spring		
CHMY 143N & CHMY 144N	College Chemistry II and College Chemistry II Lab	5
BIOB 272		
General Education Requirement		3
Elective		3
	Hours	**11**
Senior		
Autumn		
GEO 101N & GEO 102N	Introduction to Physical Geology and Introduction to Physical Geology Lab	4
CHMY 485	Laboratory Safety	1
HEE 233		
EDU 222	Educational Psychology and Child Development	3
EDU 345		3
EDU 395	Clinical Experience (K-12 I)	1
	Hours	**12**
Spring		
EDU 370	Integrating Technology into Education	3
EDU 395	Clinical Experience (K-12 II)	1
EDU 407E	Ethics & Policy Issues	3
EDU 481	Content Area Literacy	3
EDU 497	Teaching and Assessing	4
	Hours	**14**
	Total Hours	**116**

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