

PHYSICS EDUCATION MINOR

- This minor contains course requirements designed to meet state standards. Those interested in teaching in K-12 schools must complete the education/teaching concentration 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 education/teaching concentration of a major or education/teaching minor in that content area.
 - Secondary Education Licensure Program (<https://www.umt.edu/education/departments/teaching-and-learning/tep/default.php>)
 - Licensure Degree Requirements (<https://catalog.umt.edu/colleges-schools-programs/education/teaching-learning/lic-secondary-licensure/>)
- To complete this minor, you need to contact the Teaching and Learning Department. Approvals for this track must come from the Teaching and Learning Department.
- Individuals completing this minor must also complete the education/teaching concentration of a major in another teaching content area.

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.

Minor - Physics Education

- The mathematics prerequisites for courses in the Minor in Physics Education include M 171, M 172, M 273, and M 221.

Course Requirements

Code	Title	Hours
Required Lower-Division Courses		
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	Fundamentals of Physics with Calculus I and Physics Laboratory I with Calculus	

PHSX 217N & PHSX 218N	Fundamentals of Physics with Calculus II and Physics Laboratory II with Calculus	
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Upper-Division Core Courses

Complete all of the following courses:

PHSX 301	Intro to Theoretical Physics	3
PHSX 320	Classical Mechanics	3
PHSX 330	Communicating Physics	3
PHSX 343	Modern Physics	3

Mathematics and Statistics

Complete all of the following courses:

M 171	Calculus I	4
M 172	Calculus II	4
STAT 216	Introduction to Statistics	3-4
or STAT 342	Probability and Simulation	
M 273	Multivariable Calculus	4
M 274	Introduction to Differential Equations	4

Additional Science Courses

Complete all of the following:

ASTR 131N	Planetary Astronomy	3
or ASTR 132N	Stars, Galaxies, and the Universe	
BIOB 160	Principles of Living Systems	3
or BIOB 170N	Principles of Biological Diversity	
or BIOE 172N	Introductory Ecology	
or BIOO 105N	Introduction to Botany	
CHMY 121N	Introduction to General Chemistry	4
CHMY 485	Laboratory Safety	1
CSCI 150	Introduction to Computer Science	3
or CSCI 151	Interdisciplinary Computer Science I	

Physics Education Requirement

Complete the following course

EDU 497	Teaching and Assessing (Methods: 5-12 Science)	3
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Total Hours **58-59**

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>).