

PHYSICS MINOR

Minor - Physics

College of Humanities & Sciences

Degree Specific Credits: 24

Required Cumulative GPA: 2.0

Catalog Year: 2018-2019

Note: Mathematics prerequisites for the physics minor are M 171, M 172, M 273, (and M 221 if needed).

Summary

Code	Title	Hours
Required Lower-Division Courses		10
Upper-Division Core Course		3
Elective Courses		11
Teaching Physics Track		
Total Hours		24

Required Lower-Division Courses

Note: The Physics with Calculus series (PHSX 215N - PHSX 218N) is strongly recommended.

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 Core Course

Code	Title	Hours
Complete the following course:		
PHSX 301	Intro Theoretical Physics	3
Total Hours		3

Minimum Required Grade: C-

Elective Courses

Code	Title	Hours
Complete 11 credits of the following courses, 8 of which must be upper-division:		11
PHSX 141N	Einstein's Relativity	
PHSX 291	Special Topics	
PHSX 311	Oscillations and Waves	
PHSX 320	Classical Mechanics	
PHSX 323	Intermediate Physics Lab	
PHSX 327	Optics	
PHSX 330	Communicating Physics	
PHSX 333	Computational Physics	
PHSX 343	Modern Physics	
PHSX 423	Electricity & Magnetism I	
PHSX 444	Advanced Physics Lab	
PHSX 446	Thermodyn & Stat Mech	
PHSX 461	Quantum Mechanics I	
PHSX 462	Quantum Mechanics II	
Total Hours		11

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.
- Individuals completing the teaching track of this minor must also complete the teaching track of a major in another teaching content area.

Teaching Physics Track Requirements:

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>).