

# PHYSICS MINOR

## Minor - Physics (Minor)

### College Humanities & Sciences

Degree Specific Credits: 24

Required Cumulative GPA: 2.0

### Catalog Year: 2017-2018

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

## Summary

Required Lower Division Courses	10
College Physics	
Physics with Calculus	
Upper Division Core Course	3
Elective Courses	11
<b>Total Hours</b>	<b>24</b>

## Required Lower Division Courses

**Rule:** Must complete all of the following courses in one of the two options:

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

10 Total Credits Required

### College Physics

**Rule:** May complete all of the following courses:

PHSX 205N	College Physics I	4
PHSX 206N	College Physics I Laboratory	1
PHSX 207N	College Physics II	4
PHSX 208N	College Physics II Laboratory	1
<b>Total Hours</b>		<b>10</b>

Minimum Required Grade: C-

### Physics with Calculus

**Rule:** May complete all of the following courses:

PHSX 215N	Fund of Physics w/Calc I (strongly recommended)	4
PHSX 216N	Physics Laboratory I w/Calc (strongly recommended)	1
PHSX 217N	Fund of Physics w/Calc II (strongly recommended)	4
PHSX 218N	Physics Laboratory II w/Calc (strongly recommended)	1
<b>Total Hours</b>		<b>10</b>

Minimum Required Grade: C-

## Upper Division Core Course

**Rule:** Must complete the following course:

PHSX 301	Intro Theoretical Physics	3
<b>Total Hours</b>		<b>3</b>

Minimum Required Grade: C-

## Elective Courses

Select 11 credits with 8 upper division credits from the following: 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-

The term 'minor' for this teaching option refers to courses that need to be completed. To sign up for this option, you need to contact the Teaching and Learning Department. Do not fill out a minor form for graduation or the minor section of the major change form. Approvals for this option must come from the Teaching and Learning Department.

## Teaching Physics Track

A teaching minor is an academic minor which may contain different course requirements designed to meet state standards. Those interested in teaching in K-12 schools must complete a teaching major in a content area plus the teacher preparation program through the Department of Teaching and Learning. Additional teaching areas can be added through completion of either a teaching major or a teaching 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/past-catalogs/2017-2018/colleges-schools-programs/education-human-sciences/teaching-learning/lic-secondary-licensure>)

## Teaching Licensure Requirements

**Note:** 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 (<http://catalog.umt.edu/past-catalogs/2017-2018/colleges-schools-programs/education-human-sciences/teaching-learning>) in the College of Education

and Human Sciences for more information. A minor GPA of 2.75 is required to be eligible for student teaching. Individuals completing a teaching minor must also complete a teaching major in another content area.

**Teaching Licensure Course**

**Rule:** Must complete the following course

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

EDU 497	Teaching and Assessing	4
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Total Hours		4

Minimum Required Grade: C-