

Freshman Physics Experience - PHSX 101

- SUPERVISOR:** Dr Nate McCrady nate.mccrady@umontana.edu
Office: CHCB 122
Office Hours: MWF 11am-12pm, Th 1-2pm,
(and by appointment)
- SEMINARS:** F 12:10 - 1:00 PM, CHCB 304
- PREREQUISITES:** Freshman or sophomore standing in physics, or consent of instructor.
- OVERVIEW:** The goal of this class is to present an overview of what you can expect as a physics major, to give a survey of opportunities you can look forward to as a physics major (and beyond!) and to discuss current topics of research in physics and astronomy.
- DISCUSSIONS:** Each student is required to attend at least 10 of the 14 discussions. Please let me know prior to class if you know you will be absent from one of our regularly scheduled classes. The goal is to have these discussions be informal with a lot of dialogue (this requires your participation!) so that you are well informed as to what you can expect as a physics major at UM. There will occasionally be light homework prior to a seminar in the form of reading or coming up with questions for our panels.
- CLASS TOPICS:** *Introduction to physics and astronomy at UM*
Computing in Physics and Astronomy
Opportunities for involvement in research
What do physics and astronomy majors do with their degrees?
Opportunities for involvement in teaching & outreach
What would you ask a senior physics major?
Problem solving techniques
Internships and summer programs in physics & astronomy
New developments in physics and astronomy
- GRADING:** This course can be taken for credit/no-credit only. Credit based on attendance and participation. To receive credit, you must attend at least 10 of the 13 weekly meetings.

LEARNING OUTCOMES:

After completing this course, you should:

While you are an undergraduate physics major...

- Be able to study more effectively for your physics courses
- Have an awareness of opportunities to be involved in research in the physics department at UM
- Understand what an REU is and how to apply for one
- Be able to plot data using the Python programming language

If considering graduate school...

- Recognize that a BA in Physics from UM provides an excellent pathway to graduate school in physics and other fields
- Have an idea how to select a graduate school
- Understand what the GRE is and when to take it

Career opportunities

- Have an understanding of the range of career options with an undergraduate degree in physics and astronomy
- Have an understanding of the range of career options with a graduate degree in physics and astronomy
- Understand how analytic problem solving skills will help you in many different career paths

COURSE ACCOMODATION:

This course is accessible to and usable by otherwise qualified students with disabilities. To request reasonable program modifications, please consult with the instructor. Disability Services for Students will assist the instructor and student in the modification process. For more information, visit the Disability Services website at <http://www.umt.edu/disability>.