

Phys 2760 Course Syllabus – Spring 2023

Welcome to physics 2760, University Physics II! I am Dr. Maria Mills and I am an assistant professor in the Department of Physics and Astronomy at MU. I joined MU in August of 2019. In addition to teaching, I lead a research lab where we use physics to understand how certain enzymes manipulate the structure of DNA. Although I am a physicist now, my first love was biology. In high school I took my first real physics course and became fascinated with the idea that there are basic rules that govern how the universe works. I quickly realized that those rules apply to living organisms too. All of the processes that happen in our cells and at higher levels can be described using physics.

Physics is not the easiest of subjects, but if you get it, you can see everything around you in a slightly different way. I hope you will get to change your way of looking at things after going through this course. I am looking forward to helping you on your learning journey. I have added a picture of myself in this posting so you can put a face to your instructor.)

Please start the course by navigating to [Modules](#): this is the “table of contents” for the course. The obvious place to start is the first module, [START HERE](#). Read through all the information posted in the [Syllabus](#) and follow the instructions. You can navigate from one page to another by using the “Next” button at the bottom of the right page. You will not be able to access the content in [WEEK 01](#) module until you read through the entire syllabus and take and pass the [Syllabus Quiz](#).

As your instructor, I am here to help you succeed. If you run into trouble or have questions, you can talk to me in class or simply email me. For personal issues/concerns, please contact me via the email in Canvas (emails sent to my personal email will not be answered). If you have content related questions please make sure to ask them during any of the in class sessions or post them on [Discussions](#) in Canvas. We (the instructor and TAs) will respond within 24 hours, usually sooner. Look in the syllabus for more information. Again... Welcome, and I look forward to helping you succeed in this class.

Here are two very simple guidelines to help you being successful in this class:

- 1. Prepare to be actively engaged with the course**
 - Do the required textbook reading to the best of your abilities.
 - Watch the recorded lectures and be fully prepared each week.
 - Practice applying the concepts learned: solve all the suggested example problems.
 - Ask for help when needed.
- 2. I am the instructor but this is YOUR course: take responsibility for your own learning!**
 - This course has been set up to facilitate your learning experience.

- I will provide you with the tools necessary to succeed: you must use them in order to be successful!
- The course content, assessments and all learning activities in the course have been designed to lead you toward intellectual, personal, and professional growth. As you work through the course content, consider each of the learning activities and assignments. Think about the reasons why the instructor has selected these course components to contribute to your development.
- **YOU ARE IN CHARGE OF YOUR OWN LEARNING!**
- Of course, I am always available to answer questions along the way. As you learn, you will inevitably find areas that are unclear to you, either related to the course content or your learning process. I am able to help you only if you let me know about your struggles, so make sure you ask for help!
- The more work you put in, the more you will take away from this course!

COURSE GOALS

Welcome to Physics 2760! The course is designed to be a significant experience for you, and it will:

1. Demonstrate the relevance and utility of physics to everyday life.
2. Help students become critical thinkers and problem solvers.

Course Learning Objectives

During this course you will learn some of the fundamental laws of physics as well as develop skills and habits of mind that will help you be successful throughout your academic journey.

By the end of this course students should be able to:

1. Demonstrate the ability to think critically and to use appropriate vocabulary and concepts to analyze qualitatively problems or situations involving physics.
2. Use appropriate mathematical techniques and physics concepts and laws to obtain quantitative solutions to problems in physics.
3. Assess the results of a problem or laboratory experiment.
4. Collect and analyze data using laboratory equipment and technology, interpret data, draw conclusions, and produce a lab report.

Student Learning Objectives for each individual lecture (what students should know and be able to do after each lecture) are posted on the first slide of each lecture.

Weekly Learning Cycle for achieving the learning goals:

COURSE INFO

Course Number & Title: Physics 2760, University Physics II (calculus based physics for scientists and engineers)

Course Credits: 5 credit hours

Course Description: Covers electrostatics, elementary circuits, magnetism, electromagnetic phenomena, geometric and wave optics, and relativity. Includes a laboratory.

Pre-requisites: Math 1700 (Calculus II) and Phys 2750 (University Physics I) with a grade of C- or better.

Recommended (not required) Co-requisite: Calculus III

COURSE MATERIALS

Textbook: The textbook for this class is free! It is an open educational resource (OER) created by faculty at Rice University. There are two ways to access the textbook:

From [Modules/Textbook](#). You have a pdf file for each volume listed: you can view the pdf online or download it on your computer.

From the [OpenStax website](#): University Physics, Volume 2 and Volume 3, ISBN 1-947172-20-4. From this website, you can download the entire textbook as a single pdf file, view the textbook online, download the textbook for iBooks, or Kindle. Use whatever method you like the most.

Online Homework System: Expert TA is the online homework system used in this course. The access code to the ExpertTA can be purchased online or in the bookstore.

[Follow instructions to sign up for ExpertTA.](#)

Laboratory Manual (for physics 2760, Fall 2022): All students must have a lab manual (Fall 2022 edition) and you should order it ASAP using the link below.

[Contact the MU Bookstore for ordering a lab manual.](#)

INSTRUCTOR/TA INFO