Overview

Spring quarter introduces Electricity and Magnetism, starting with the electric force, then developing the idea of the electric field and electrostatic potential. After taking a look at simple circuits, we will explore magnetism and magnetic fields. We will finish with the concept of induction and a brief look at AC circuits.

Course Philosophy

In a way, we’ve been running this course such that you’re already prepared to succeed in this new era of online education that we’re in. You’ve already learned that it’s much more useful for you to study introductory material outside of class and then actively engage in practicing it when we are together as a group. The philosophy is to do more of
this, just better. We will use a combination of independent study outside of class – reading the textbook, watching videos, and other activities – and we’ll use online Zoom meetings for guided “coaching” on how to apply these principles.

Course Structure and Expected Workload

Right now I am planning to have live meetings online through Zoom 4 times a week during the normally scheduled class times. Imagine tutorials now happening 4 times a week instead of one, using class time to do homework with the help of instructors, and you’ll have a clearer picture of what I’m envisioning. For you to get much out of this, you’ll need to come to class already familiar with the basics. This will involve reading the textbook, doing PreLectures and watching any videos (which will take me a lot of effort to make, by the way!).

The University of Oregon policy (link) defines 1 credit hour as approximately 30 real hours of student work, both in class and out of class. Thus, a 4-credit course such as this should engage students for about 120 hours over the course of the term, though this may vary from student to student. Physics is a difficult subject that requires your steady attention to learn. To do well in this course, you will have to practice solving problems on your own, even beyond just the assigned exercises.

Schedule

The daily course schedule is provided as a separate document to facilitate keeping it up to date. The schedule and all assignments will be posted on Canvas.

Grading

Course grades will be based on the following categories. Please see below for more details on course expectations and how assignments will be graded.

- 10% [E] – Engagement in discussions (in-class through Zoom/asynchronously via Discussion forum)
- 10% [T] - Tutorials
- 10% [MP HW] - Pre-lectures and homework assignments on MasteringPhysics
- 20% [PHW] – Project (e.g., cubesat) and other homework assignments
- 25% [Q] – Quizzes
- 25% [F] - Final exam

Historically, scores above 90% have earned an A, scores above 80% have earned a B, scores above 70% have earned a C, while scores below ~60% have failed. Each year is slightly different, however, and the exact ranges for this course will be determined after the final exam. The overall course evaluation will possibly be graded on a curve to account for variations in the difficulty of exams, although we will not penalize the class if everyone is doing very well. Grade reports will be provided after each midterm to indicate your achievement at that point.

P/NP option Note that the Provost is instituting a new policy to allow pass/no pass grading count for your degree and academic requirements. Furthermore, you may decide to switch to pass/no pass grading after you see your letter grade. I am excited by the possibility this holds, as it will give you the freedom to experiment with your learning, fail multiple times, and still pass the class. In general, if you participate, engage in the material, and do your own work, then you will pass. Not communicating, not doing assignments, and cheating can lead to failing grades.
**Project Homework**

We will continue to assign additional work to be completed outside of class. Like in PHYS 252, we will continue to have some projects centered around the design of cubesat components, but will also have other assignments specifically designed to help you apply the current physics concepts in ways that are actually useful. The goal of these exercises are to teach you actually useful skills that you can apply in the future, such learning how to look up, synthesize, model, and communicate information. These assignments will all be turned in online.

**Online Homework**

There will be weekly online homework assignments due through *MasteringPhysics*. These assignments will typically be due Wednesday evening at 11PM. These activities are designed to give you practice applying physics concepts and provide immediate feedback. If you are just copying solutions, you are really just shooting yourself in the foot and there is ample evidence that proves this. In some cases, I may subtly adapt homework assignments in order to detect signs of copying. These cases will be dealt with according to the policy on academic misconduct.

For people interested in making up some points missed on MP homework or who just want extra practice, you can complete additional *Adaptive Followup* questions. These questions will allow you to recover some missed points for the associated assignment. In no case will you receive ‘extra credit’ by doing additional problems. However, this is good practice for exams.

You need an account at [www.pearsonmylabandmastering.com](http://www.pearsonmylabandmastering.com) and then you need to enroll in course ID ‘mcmorrann76464’.

**Homework Deadlines and Discussion**

The case for strict deadlines:

- Provides structure in a time where days can blend together
- Helps you maintain progress and keeps everybody on the same page
- This online course is already difficult for instructors to put together, and adjusting deadlines for 70 individuals will make it moreso

The (stronger) case for flexible deadlines:

- We are in a difficult situation right now, with important circumstances that might come up

Given the realities of our time, the default expectation will be for you to turn in work the instructor and GEs will be as flexible as possible with deadlines. Turning in late homework is better than not doing the homework at all, and practicing on the homework problems will clearly help you on the exams. **Staying on top of the assignments and getting your work done on time is a key to achieving a good grade in this course.**

You are encouraged to find help in doing your homework by raising questions before normal class times so that we can discuss them in class, by discussing them with the instructor or GEs during office hours, or using the Discussions forum on Canvas. Learning how to discussing problems with other students is a very good way to discover conceptual difficulties and can be a powerful tool for improving your understanding of
the subject. **However, you should always do each problem and get an answer by yourself before discussing it with other people, and never simply copy the solution that others arrived at.** Following these rules are crucial to training your brain to solve physics problems. To facilitate students who wish to work together, we will try to schedule times in the physics drop-in center (Science Library) when your TAs will be present to help people with homework issues. The physics reading room in the atrium of Willamette hall is also available for students wishing to work together.

Please note that while discussing homework problems with other students is encouraged, copying the work of others and claiming it as your own is **academic misconduct** and will be treated as such. This includes copying solutions to problems found online. Since most of your course performance is determined by exam scores, and these exams will look a lot like your written homework problems, there is very little benefit and considerable risk to not fully engaging with the homework material. Homework is your chance to practice and to self-assess whether you are understanding the material in this course. Skipping this work will almost certainly impact your final grade.

For students looking for more intensive help, or looking for more one-on-one time, there is a list of tutors available for hire in the physics office. These are typically current UO physics graduate students or advanced undergraduates, and the list is made available by the department strictly as a helpful service (to both parties). All arrangements must be made directly with the tutors.

**Tutorials**

Tutorials are designed to give students the opportunity to discuss and assess their understanding of course topics in a more interactive, group setting with direct feedback from the teaching staff. On some weeks, we may also introduce new material in the tutorials. On other weeks, we may work on particularly complicated problems. Other times, the tutorials will be mostly about addressing conceptual difficulties. Students will work in groups of 3-4 people on the task of the week. These sessions have been shown to be a particularly effective way for students to improve their understanding of physics, and should be viewed as an integral part of the course instruction.

The tutorials will be graded for attendance and reasonable participation only. Your answers will not be graded for correctness. It is your responsibility to make sure that your attendance is properly recorded before you leave. If you are really struggling with a particular topic, you should try to use your tutorial time working with the TAs to improve your understanding. Attendance at the tutorials is mandatory, although 100% attendance is not. In each quarter there are typically 8 mandatory tutorials, and attendance at 7 of these will result in full credit. Tutorial sessions during midterm weeks will be used as a review session, and attendance at these sessions is not required.

**Class Participation and Engagement**

In general, vibrant class participation enhances all students’ learning experiences. We will use Zoom for online class discussions, and will be experimenting with the audience feedback mechanisms that it provides. This is new to all of us, so we will take an experimental, light-hearted approach to this.

I understand that in the best of times, 100% participation is not always possible due to illness, school activities, or other obligations. These are times are even stranger, so flexibility is key.
Exams
The final exam is set for 10:15-12:15 **Wednesday, June 10th** and will be held online. It is likely that the exam will require a live video feed of yourself during the exam, so ensure you have a device and internet connection capable of this. These dates will not change, so please arrange your schedules to accommodate these times. In case of serious conflicts, please contact us as far in advance as possible so that we can work out a solution together. No makeup examinations will be allowed. If a higher score is achieved on the final than one of your midterms, that lowest midterm grade will be replaced by your final score. This gives you a chance to redeem yourself if you really screw up a midterm exam.

Academic Integrity
All students are expected to complete assignments in a manner consistent with academic integrity. Students should properly acknowledge and document all sources of information (e.g. quotations, paraphrases, ideas) and use only the sources and resources authorized by the instructor. The University Student Conduct Code ([https://dos.uoregon.edu/conduct](https://dos.uoregon.edu/conduct)) defines academic misconduct. Students are prohibited from committing or attempting to commit any act that constitutes academic misconduct. By way of example, students should not give or receive (or attempt to give or receive) unauthorized help on assignments or examinations without express permission from the instructor. If there is any question about whether an act constitutes academic misconduct, it is the students’ obligation to clarify the question with the instructor before committing or attempting to commit the act. Additional information about a common form of academic misconduct, plagiarism, is available at [researchguides.uoregon.edu/citing-plagiarism](https://researchguides.uoregon.edu/citing-plagiarism).

Campus resources to support your learning
- **Tutoring and Learning Center (TLC)** Drop-in math and writing support in addition to tutoring, study skills support, and Class Encore. Located in the 4th Floor Knight Library (541) 346-3226, tlc@uoregon.edu
- **Counseling Center** Call anytime to speak with a therapist who can provide support and connect you with resources. Located on the 2nd Floor of the Health Center(541)346-3227
- **Accessible Education Center** The University of Oregon is working to create inclusive learning environments. If there are aspects of the instruction or design of this course that result in barriers to your participation, please notify us as soon as possible. You are also encouraged to contact the Accessible Education Center. If you are not a student with a documented disability, but you would like for us to know about class issues that will impact your ability to learn, we encourage you to come visit during office hours so that we can strategize how you can get the most out of this course. Located on the 1st Floor of Oregon Hall (541) 346-1155, uoaec@uoregon.edu
- **Center for Multicultural Academic Excellence (CMAE)** mission is to promote student retention and persistence for historically underrepresented and underserved populations. We develop and implement programs and services
that support retention, academic excellence, and success at the UO and beyond. We reaffirm our commitment to all students, including undocumented and tuition equity students. Located on the 1st Floor of Oregon Hall (541) 346-3479, cmae@uoregon.edu.

Inclusiveness
Open inquiry, freedom of expression, and respect for difference are fundamental to a comprehensive and dynamic education. We are committed to upholding these ideals by encouraging the exploration, engagement, and expression of divergent perspectives and diverse identities. This is part of being a scientist.

Our Duty to Report
As instructors of this course, we are Student-Directed Employees. As such, if you disclose sensitive information to us, we will respond to you with respect and kindness. We will listen to you and will be sensitive to your needs and desires. We will not judge you. We will support you. We will direct students who disclose sexual harassment or sexual violence to resources that can help and will only report the information shared to the university administration when the student requests that the information be reported. As Student-Directed Employees, we can offer privacy because we are not required to report certain information to the university. However, we cannot be bound by confidentiality in the same way that a counselor or attorney is. Unless someone is in imminent risk of serious harm or is a minor, we will keep your disclosure private. Please note the differences between confidential and private. For more information on reporting obligations of employees and specific details about confidentiality of information, visit titleix.uoregon.edu

Discrimination and Harassment Resources
Additional help and resources for any student who has experienced sexual assault, relationship violence, sex or gender-based bullying, stalking, and/or sexual harassment are available at safe.uoregon.edu or by calling the UO’s 24-hour hotline 541-346-7244 [SAFE] or the non-confidential Title IX Coordinator at 541-346-8136.

Students experiencing any other form of prohibited discrimination or harassment can find information at respect.uoregon.edu or aaeo.uoregon.edu or contact the non-confidential AAEO office at 541-346-3123 or the Dean of Students Office at 541-346-3216.