

Syllabus for PHYS260
General Physics: Electricity, Magnetism and Thermodynamics
Prof. Girvan, Sections 010x and 030x
Fall 2024

LECTURES:

Lecture	Time	Room
Sections 010x	MW 4:30-5:45pm	PHY 1412
Sections 030x	TuTh 12:30-1:45pm	PHY 1412

Lecture notes: A pdf file of the slides used in lectures will be posted on elms before the start of the lecture. An expanded version will usually be posted afterwards containing the clicker questions from that day and worked out problems.

Note taking: Although lecture notes are provided, you are strongly encouraged to take notes yourself. We find this helps greatly with understanding and retaining the material.

Why it's important to attend lectures: Exams will more closely follow what's covered in lectures than what's in the textbook. Some problems on the exams will be taken directly from the lectures. Your answers to electronic polling questions (see below) help adjust the material for the class.

COURSE DESCRIPTION and PRE-/CO- REQS:

Second semester of a three-semester calculus-based general physics course. Electrostatics, magnetism, induction, DC and AC circuits; Maxwell's Equations, heat, and thermodynamics.

Prerequisite: PHYS161 and MATH141

Corequisite: PHYS261 (Lab)

Credit only granted for: PHYS142, PHYS260, or PHYS272

This course moves at a fast pace. It's important to try to keep up and seek help early when you run into difficulties. We have lots of resources! (see below)

COURSE WEBSITE: On ELMS. We will use our ELMS course website extensively. The front page contains important links (syllabus, working schedule, etc), as well as class announcements and daily links, listed in reverse chronological order. Time-sensitive information regarding the course will be sent via an ELMS announcement.

INSTRUCTOR: Prof. Michelle Girvan

Contact Info:

*Please **message Prof. Girvan via ELMS** for a prioritized reply. Emails to girvan@umd.edu are more likely to be missed. If you do not receive a reply to your ELMS message within 1 business day, or if the matter is urgent, please also send an email to girvan@umd.edu with the subject "IMPORTANT: PHYS272"*

Office hours:

M 1-2pm, Tu 3:30-4:30 pm, or by appointment. Location: AVW 3341
Pronouns: she/her

DISCUSSION and TA INFO:

Section	Time	Room	TA name	Email	Office hours
0101	Tu 11-11:50am	PHY 1402	Matt Bravo	mbravo@umd.edu	W 10-11am
0102	W 10-10:50am	PHY 4221	Zhao Xu	zhxu1226@umd.edu	W 3-4pm
0104	W 9-9:50am	PHY 1219	Matt Bravo	mbravo@umd.edu	W 10-11am
0105	F 3-3:50pm	PHY 1219	Matt Bravo	mbravo@umd.edu	W 10-11am
0301	M 12-12:50pm	PHY 1402	Tao Tao	tao2021@umd.edu	W 11am-12pm
0302	W 11-11:50am	PHY 1219	Jalen Garner	jgarner4@umd.edu	Th 3-4pm
0303	M 2-2:50pm	PHY 1219	Jalen Garner	jgarner4@umd.edu	Th 3-4pm
0304	F 1-1:50pm	PHY 1402	Tao Tao	tao2021@umd.edu	W 11am-12pm
0305	Tu 11-11:50am	PHY 0405	Nathan Zimmerberg	nzimmerb@umd.edu	-
UGTF			Jameson Jau	jjau12@terpmail.umd.edu	Th 4-5pm
UGTF			Pat Phoompson	sphoom22@terpmail.umd.edu	M 12-1pm
UGTF			Erika Falco	efalco1@terpmail.umd.edu	Tu 5-6pm

Office hours are in the course center (PHY 1214) unless otherwise noted. The discussion section serves multiple purposes. First, it provides an opportunity for students to ask questions and gain clarity on topics covered in lectures and readings. Secondly, it focuses on problem-solving skills, and you can request to work on particular homework problems in discussion. Therefore, it is highly beneficial to attempt the homework prior to the discussion session. Doing so will allow you to ask the TA for help with the specific problems you find challenging.

COURSE MATERIALS:

Required Textbook: [Openstax University Physics, Volume 2](#). Free calculus-based physics textbook. You can view online, download a pdf, or order a print copy (for a fee).

Expert TA homework system (required): We will be using Expert TA for online submission of homework assignments. The cost is \$32.50 for the semester. Registration for Expert TA can be accessed through ELMS by clicking on an Expert TA assignment link. This action will bring you directly to the assignment in Expert TA. The first time you access Expert TA from the course, you will be given the choice between payment or using a free 14-day trial.

Other recommended supplementary textbooks:

- Young and Freeman, University Physics with Modern Physics

- Knight, Physics for Scientists and Engineers
- Serway and Jewett, Physics for Scientists and Engineers

GRADE BREAKDOWN (for non-honors sections)

Homework: 20%

Quizzes: 10%

Midterm Exams (2): 37% (22% higher score, 15% lower score)

Final Exam (cumulative): 33%

HONORS GRADE BREAKDOWN

Regular homework: 17%

Honors challenge homework: 3%

Quizzes: 10%

Midterm Exams (2): 35% (21% higher score, 14% lower score)

Honors Exam: 4%

Final Exam (cumulative): 31%

CURVING, DROPPED GRADES, and GRADE DISPUTES. **Curving:** Depending on the distribution of scores, individual components like midterm exams may be curved before those scores are used in determining your composite component scores. In other words, each midterm will be curved separately and these curved scores will be used to determine how midterm grades are weighted. When a component is curved, this will be announced in class and also posted on ELMS. Curving will be done separately for 010x and 030x sections, because midterm exams will be different. Homework and quizzes will generally not be curved. **Dropped grades:** Your lowest quiz score and lowest homework score will be dropped. **Grade disputes:** Any formal grade dispute must be submitted via a message to Prof. Girvan on ELMS within one week of receiving the grade.

INFO for HONORS SECTION: In addition to each standard homework assignment, you'll have an honors challenge homework set (1-2 problems) to complete for the same deadline. As with standard homework, your lowest score will be dropped. You will also have an honors exam in your discussion section timeslot the last week of classes. This exam will be cumulative and at the level of the challenge problems assigned to you.

HOMEWORK: Homework will usually be due weekly via Expert TA. There may be different due dates for 010x and 030x sections so as to sync up with the lecture materials. The link to the assignment in Expert TA will be accessible via ELMS. Deadlines will not be extended except in very special, documented circumstances. Features of the electronic grading system:

- You will know right away if your answer is right or wrong
- If you give a wrong answer, you can try again to see if you can get the correct solution. Grading settings will be available so that you are aware of the number of attempts and deductions for incorrect answers.
- The site also has a tutorial capability that you may find helpful.

- The software may randomize the numbers each time you attempt a new problem. Remember that other students working on precisely the same problems will likely have different numbers. The best way to solve physics problems is first to carefully work out a general analytical solution to the problem and then plug in the numbers at the end. This is especially true if the numbers are randomized each time, so everyone has different numbers.

WHY HOMEWORK IS IMPORTANT: One of the main ways you can understand physics is by doing the homework. Do not wait until the night before it's due to start working on your homework. The homework is supposed to be hard, and it counts a lot for your grade. A sure way to do poorly in this course is not doing the homework, not giving yourself enough time to work on it, or focusing more on getting the right answers than understanding how to do the problems yourself. You are encouraged to work together but remember that you will need to be able to do these problems on your own. In addition to doing the assigned problems, you should work through some unassigned problems, ideally in tandem with your study group. A key to success in this course is to do lots of problems.

QUIZZES: Several 20-minute online quizzes will be conducted throughout the session administered on ELMS. Each quiz will be posted at least 4 days before the due date. You can start the quiz at any time after it's posted but you only have 20 minutes to complete it once you start. The quizzes will be a chance to check on how you are doing conceptually. There will be no makeup for missed quizzes. You will be exempt if you have a valid, documented excuse for missing the quiz.

MIDTERM EXAMS: You will have 2 closed-book midterm exams (A *single-sided* 8.5"x11" formula sheet is allowed). Your higher score (after curving) will count as 22% of your final grade and your lower score (after curving) will count as 15% of your final grade.

FINAL EXAM: The final exam will be held on Friday, Dec 13, 1:30pm - 3:30pm. The exam will be closed book. You will be allowed to bring a double-sided 8.5x11" formula sheet.

ELECTRONIC POLLING: We will be using electronic polling during lecture to check how well the class is absorbing concepts and also get feedback on what parts of the course are most challenging so as to focus the material appropriately. Participation is expected and will be recorded, but will not count toward your grade. We will use slido for electronic polling. You can use your smartphone, tablet or laptop for this and there is no fee involved. This is a new system to me (in order to save you fees with other systems), so kindly be patient while we work out any technical issues.

USE of MOBILE PHONES, TABLETS, and/or LAPTOPS: You will be using your mobile phones, tablets or laptops for electronic polling, but you are strongly discouraged from using these devices for non-course-related purposes.

STUDENTS WITH DISABILITIES: Accommodations will be provided to enable students with documented disabilities to participate fully in the course. Please discuss any needs with the instructor at the beginning of the semester so that appropriate arrangements can be made. Students who are registered with DSS, and who are planning to take examinations at DSS facilities, are required to give the instructor the pertinent authorization forms in editable electronic format at least two lectures (one week) prior to each exam date.

ACADEMIC HONESTY: Note that although you are encouraged to discuss homework and class material with other students, any work you submit must be your own and should reflect your own understanding. Academic dishonesty, such as cheating on an exam or copying homework, is a serious offense which may result in suspension or expulsion from the University. The University of Maryland, College Park has a nationally recognized Code of Academic Integrity, administered by the Student Honor Council. This Code sets standards for academic integrity at Maryland for all undergraduate and graduate students. As a student you are responsible for upholding these standards for this course. It is very important for you to be aware of the consequences of cheating, fabrication, facilitation, and plagiarism. For more information on the Code of Academic Integrity, follow [this link](#).

INFO ABOUT UNIVERSITY POLICIES: Information about university policies regarding academic integrity, acceptable use of technology, student privacy, civility and respect, etc. can be found [here](#).

ABSENCES AND MAKEUPS: If you must miss a deadline or exam for religious observance, or other legitimate reasons, please notify me in advance, preferably ASAP. If you miss an exam due to illness or emergency, please get in touch ASAP after the fact. In these kinds of extenuating circumstances with appropriate documentation, a makeup exam will be arranged accordingly.

ADDITIONAL HELP:

[Course Center](#) (PHY1214): A great place to get help with content and homework problems The TAs for PHYS161 and 260 will use this space for office hours. Check the schedule to see which TAs are available.

SPS (Society of Physics Students) Free Tutoring (PHY 1303) is offered from 4:00 pm to 6:00 pm Monday to Thursday.