

Syllabus Fall 2015

COURSE DESCRIPTION

Welcome to University Physics II! The goal of this course is to help you learn physics (specifically, classical mechanics). In order to achieve this, the course has been designed following the best pedagogical principles of Physics Education Research. For this reason, it may feel a bit different from other courses you may have had.

You will find plenty of people ready to help you through this semester, but nothing will happen without your collaboration, so, in order for all of us to succeed, this is what you must do:

- **Read the assigned material before coming to class.** The assigned reading for each day can be found on the course schedule (available through a link on the sidebar, under "Course Information;" see also "Study guide" under "Course Content"). This will be enforced through a *multiple choice homework* assignment on the reading, which is due every day before class begins.
- **Come to class everyday.** If you have read the material, then the lecture will be the second time you will see it. You'll be able to ask questions about anything you did not understand on your own; you will also be exposed to a somewhat different presentation of the basic material than the one in the textbook. This is good because different people learn differently. **Attendance to class is mandatory**, and will be enforced through an *in-class quiz* every day.
- **Come to every lab activity;** participate fully in it, and *make sure you work out the pre-lab activity before going into the lab*. The labs are coordinated with the lectures, so they will give you a "third pass" through much of the same material, in a "hands-on" way. This may be the most important learning opportunity you'll have, because physics is, after all, an experimental science! Most labs will involve you performing an actual experiment, but a few will be devoted to test review or working problems in groups. Regardless, **attendance to every lab is mandatory** and will be an important part of your grade for the course, as discussed in the next section.
- **Do all the homework!** In the end, the only way to become good at anything is through consistent, steady practice. To this end, in addition to the multiple-choice (MC) homework, every week you will have an *"open-response" (OR) homework*, as indicated in the class schedule. You'll find the text for the assignment online (see the sidebar on the left), but you need to work out the homework on your own, on a piece (or several pieces) of paper, that you then need to *scan as a single pdf file and upload to Blackboard before the due date*.
- **Come to us for help!** Ask questions in class; ask questions in the lab; if you get stuck on a homework problem, come to our office hours. Between the instructor and the TAs, we offer office hours practically round the clock every week (you can get the schedule from the link on the sidebar). Most TAs hold office hours in the library of the Physics building; the course instructor will typically hold them in his or her own office, unless stated otherwise. *There is no excuse for doing poorly on the homework:* we will provide you with all the help you'll need, you just need to start working on it early!

A benefit of this approach is that we are able to make the Friday lecture optional, except for a couple of weeks in the semester! On all the other weeks, the Friday lecture will be like a "practicum" or drill where your instructor will work out additional examples for you and answer homework questions. You are all encouraged to attend, but attendance will not be taken, and there will also be no homework due on those days.

EVALUATION INSTRUMENTS

There are seven types of evaluation instruments that will determine your grade: tests (60%), MC homework (5%), OR homework (10%), lab activities (10%), in-class quizzes (5%), one detailed lab report (5%), and one lab examination (5%). Some important points about these are explained below.

- **Tests:** There will be *four midterms and a final*. The dates of the midterms are on the class schedule; they will be held in the evenings, starting at 6:30 pm; the locations will be announced sufficiently ahead of time. The final is comprehensive, in the regular classroom, and at the University-designed time (which you can get from the [Registrar's page](#)). *The final carries the same weight as two midterms. Students who have a 70% or better in the OR homework (without drops) can drop one midterm or, alternatively, reduce the weight of the final by half*, so it counts the same as a midterm instead of double. For the tests you should bring your own paper, and no books or notes; only the "official" equation sheet will be allowed (you can find this equation sheet through the sidebar, and you should become well acquainted with it ahead of every exam).
- **Multiple-choice (MC) homework assignments** are to be completed online. There is one due every lecture day, before the lecture. *You are not allowed to drop any of these*, since you can take them at any time, from home or elsewhere, and all you need is to have read the book in order to be able to answer the questions.
- **Open-response (OR) homework assignments** are typically due once a week, before the first lecture of the week. An exception is on exam weeks, when there will be an extra OR assignment that is basically a practice exam. Each

assignment will be graded for a total of six points. ***If you fail to upload your assignment by the deadline, you will receive a negative score of -6 points*** instead. At the end of the semester, *your two lowest scores will be dropped*; this is to allow for accidents, or other extenuating circumstances that may make submission impossible.

- **Lab activities** must be turned in to your TAs. Each is graded out of 5 points. *If you did not complete the pre-lab activity before going into the lab, points will be subtracted from your total score. **If you fail to complete a lab, you will get a negative score of -5.*** At the end of the semester, as with the OR homework, your two lowest scores will be dropped; however, *if you miss more than 4 labs you will fail the course.* Limited opportunities to make up a missed lab may be available, but you should not count on them; check with your lab instructors if ever you need to miss a lab.
- **In class quizzes** will be given on every lecture day. Each will be worth two points, one for attendance, and the second for paying attention! *These quizzes will be administered using "clickers,"* so you need to get a clicker, register it, and bring it to class every day. An absence counts as a zero. At the end of the semester, your two lowest quiz scores will be dropped as well, again allowing for unforeseen circumstances that may make it impossible for you to come to class. If for some medical or other legitimate reason you anticipate that you will have to miss more than two lectures during the semester, please contact your instructor as soon as possible.
- Information about the **detailed lab report** and the **lab exam** will be provided in the lab.

The course is graded on a straight scale: > 85% A, > 70% B, > 60% C, > 50% D, otherwise F. In addition, regardless of your other scores, if you fail the final (make less than 50% on it) you will fail the class!

REQUIRED MATERIALS AND ADDITIONAL INFORMATION

You need to buy the book! *Principles and Practice of Physics*, by Eric Mazur. The Bookstore will carry a special edition for the University of Arkansas, which is less expensive than many other textbooks. You may be able to find a copy of an earlier edition somewhere; if so, we have provided elsewhere on this site a table listing the way the chapters in the most recent edition correspond with chapters in the earlier edition.

You'll need a clicker, as stated above, for the in-class quizzes.

You need to buy the activity guide for the labs! It is not very expensive, and it is essential.

In the event that the bookstore runs out of these materials and you have to wait for them to reorder, we are making available the first few chapters of the book and the first chapter of the activity guide online; look for links to these materials from the sidebar on the left.

Inclement weather policy: Class will be held provided the University is open. However, if the weather makes it too hazardous for you to come to campus, please let your instructor know and you will be excused from attending on that day. If the university closes and we have to miss a lecture, the schedule will be rearranged accordingly.

Academic dishonesty: You are required to be familiar with and abide by the policies of the University regarding academic integrity (posted [here](#) and [here](#)). Your instructors are required to and will enforce these policies.

Emergency Preparedness: Instructions for specific emergencies, such as severe weather, active shooter or fire, can be found at emergency.uark.edu. However, there are some simple things you should do in the event an emergency occurs during our class: (1) Always follow the directions of the instructor or emergency personnel, (2) If told to evacuate, do so immediately, (3) If told to shelter-in-place, find a room, in the center of the building with no windows, on the lower level of the building, (4) If told to lockdown, lock and barricade the door. Turn off the lights and wait for police to arrive.