

PHYS 2 — Basic Physics — UCSB 2018 Summer Session B

Time and Place: Lectures are held in Broida Hall 1640 on MTW 2:00–3:20 pm. Discussion sections meet in Girvetz Hall 1119 on Thursdays for both Section 1 (11:00 am–12:20 pm) and Section 2 (12:30–1:50 pm).

Course Webpage: “PHYS 2 - BASIC PHYSICS - B - Summer 2018” on GauchoSpace (<https://gauchospace.ucsb.edu>)

Instructor: Greg Salvesen (Astronomer / Postdoc). Office hours in Broida 2015E on Thursdays 3:30–5:00 pm and Fridays 9:00–10:30 am. You can also e-mail me (greg@ucsb.edu) to make an appointment.

Teaching Assistant: Alex Eden (Mechanical Engineer / Graduate Student). E-mail: a_eden@engineering.ucsb.edu. Office hours in the Physics Study Room (Broida 1019) on Mondays and Tuesdays 10:00–11:30 am. The Physics Study Room is staffed Mondays, Tuesdays, and Thursdays 10:00 am–3:00 pm by TAs of other physics classes who can help you, but please be understanding that they must give priority to students enrolled in their courses if it is busy.

Aims: The goal of this course is to provide a solid foundation and introduction to rotational dynamics, elasticity, systems in equilibrium, Newtonian gravitation, periodic motion, fluid mechanics, and thermodynamics. We will learn about the physical principles governing these topics and use problem solving techniques to develop a deeper understanding of these principles. *My aim is to provide you with the tools and knowledge to continue learning, thinking critically, and pursuing your goals.*

Required Course Materials: Most PHYS 2 students will already have all the required course materials from taking PHYS 1 previously. If you do not, I included some options for obtaining these materials.

- Textbook: Young and Freedman, *University Physics with Modern Physics*, 14th Edition.
- Access code for the MasteringPhysics (<https://www.masteringphysics.com/>) online homework portal.
 - Option 1: Purchase a *new* loose leaf version of the textbook, which is packaged with a MasteringPhysics access code, at the UCSB Bookstore (\$235).
 - Option 2: If you choose to purchase the textbook outside of the UCSB Bookstore or a used copy, it likely does not come with a MasteringPhysics access code. You will need to purchase an access code when you register as a Student on MasteringPhysics (\$69) if you do not already have one.
 - Option 3: Purchase the eText version of the textbook bundled with an access code when you register as a Student on MasteringPhysics (\$116).
- An iClicker 2 remote transmitter.
 - Available at the UCSB Bookstore for purchase (\$56 new, \$42 used), or you can rent one from A. S. Tech Rentals (<https://techrental.as.ucsb.edu/>) for \$5 per quarter. Your iClicker 2 from a previous course is fine.

Course Description: PHYS 2 is the second course in the lower-division calculus based physics sequence. Its prerequisites are PHYS 1, MATH 3A, and MATH 3B. PHYS 2 covers the following topics:

- Chapter 10: Dynamics of Rotational Motion
- Chapter 11: Equilibrium and Elasticity
- Chapter 12: Fluid Mechanics
- Chapter 13: Gravitation
- Chapter 14: Periodic Motion
- Chapter 17: Temperature and Heat
- Chapter 18: Thermal Properties of Matter
- Chapter 19: The First Law of Thermodynamics
- Chapter 20: The Second Law of Thermodynamics

Grading:

- Midterm Exam (25%): Monday, August 27, 2:00–3:20 pm
 - Section 1: Broida Hall 1640
 - Section 2: BioEngineering 1001
- Final Exam (40%): Thursday, September 13, 7:30–10:30 pm
 - Section 1: Broida Hall 1640
 - Section 2: BioEngineering 1001
- Homework (25%): MasteringPhysics assignments (~twice weekly)
- Preparation and Participation (10%): Includes discussion section (5%) and iClicker responses (5%)

Your total percentage will be rounded to the nearest integer and the letter grade you earn for the course will be:

A+ = 95–100%	B+ = 80–84%	C+ = 65–69%	D+ = 50–54%
A = 90–94%	B = 75–79%	C = 60–64%	D = 45–49%
A– = 85–89%	B– = 70–74%	C– = 55–59%	F = 0–44%

If deemed necessary, final course letter grades will be shifted upwards to reflect historical distributions for PHYS 2. Grades will not be shifted downward to penalize you. In other words, you are guaranteed at least the letter grade above corresponding to your end-of-course total percentage.

Exams Policy: You may bring one double-sided page (8.5×11 inches) with *your* notes to the midterm exam and two double-sided pages to the final exam. Calculators will be allowed, but computers and mobile devices will not. Make-up exams will not be accommodated, except in the case of an emergency. In the unfortunate event that this happens to you, please contact me at your earliest opportunity. If you have a verifiable conflict with the final exam, such as multiple finals scheduled in the same time period, please contact me immediately to make alternative arrangements.

Students with disabilities may request academic accommodations for exams online through the UCSB Disabled Students Program (<http://dsp.sa.ucsb.edu/>). Please make your requests for exam accommodations through the online system as early in the quarter as possible to ensure proper arrangements.

Homework Policy: All homework assignments are through MasteringPhysics (<https://www.masteringphysics.com/>). The course ID is: **PHYS2Salvesen**. If you have trouble with access, please contact myself or the MasteringPhysics representative, Nick Dincelli (nick.dincelli@pearson.com).

Homework sets will be especially frequent (~twice a week) due to the compressed nature of the summer session. Homework will not be accepted late — except in extremely dire circumstances, and you must notify me before the due date — because solutions will be released immediately and sometimes discussed in class.

You are strongly encouraged to work out homework problems on your own first, before collaborating with your classmates or consulting other sources. You are advised to write up your own organized solution set for each homework assignment, especially for problems you found challenging. Upper-level courses will expect you to submit written homework solution sets. Learning to solve physics problems is a skill that you must develop for yourself in order for concepts to “click”. This can be difficult and frustrating at times, but stick with it when you feel stuck! There are many resources here to help you including myself, your TA Adam, the Physics Help Room, and your classmates.

Preparation and Participation Policy: You will use your iClicker in every class meeting and discussion section. iClickers are great tools for engaging with the lecture material, fostering discussion, and soliciting feedback on how the course is going. Each class session, you will receive full credit for your iClicker responses regardless of submitting a right or wrong answer as long as you respond to $\geq 75\%$ of the clicker questions, otherwise you will receive no credit. I will drop your two lowest iClicker scores.

In lecture, but especially in discussion section, you will be solving physics problems in small groups and on your own. Therefore, you need to come prepared with paper, pencil, and your course notes. I urge you to practice good study habits of maintaining an organized notebook, which is an excellent resource when preparing for exams.

Reading will be assigned in advance of each lecture. Please take the reading seriously, as it provides your first exposure to the material you will see in lecture, but at your own pace. I encourage you to ask questions and volunteer answers. An honest attempt at an answer is better than a correct answer — we generally learn more by being wrong than right.

Class Time Policy: My classroom will be a place of learning and respect. I promise to respect your time and busy schedule by ending lectures and discussion section promptly at the official time. In return, I ask you to arrive to class prepared, attentive, and ready to participate *on the hour*. If you need to miss a class, please communicate this to me beforehand and make any necessary arrangements to cover your absence.

Non-discrimination Policy: All students have the right to learn and participate in a classroom environment free of intimidation, harassment, and discrimination based on characteristics such as gender, race, age, sexual orientation, disability, religious or political beliefs and affiliations. I will address any related issues that surface immediately; please help me to cultivate a positive classroom environment by communicating any concerns that you have.

Academic Dishonesty: This will be dealt with severely. Among the prohibited activities are:

- Collaborating or cheating on exams. Students shown to have cheated on an exam will receive a grade of “0”.
- Attempting to misuse any course-related computer system or tampering with another student’s coursework.
- Fabricating an excuse for absence.
- Using an iClicker on behalf of another student.

For any of these offenses a Faculty Report Form for Academic Misconduct will be sent to the Office of Judicial Affairs, and your case will be referred to the Student-Faculty Committee on Student Conduct. It is not uncommon for a first-time offender to be suspended from the University for one quarter for committing one act of cheating. A second offense commonly leads to permanent suspension from the University.

Campus Services: Please use the following link to find support services available to you:
<http://oic.id.ucsb.edu/getting-started-ucsb/campus-services>

Hazing, Harassment, And What To Do About It: What you might think of as “joking around” can be a serious problem if it inhibits others from participation in study groups or other student activities.

This includes, but is not limited to, derogatory comments about women, students from other cultures, LGBTQIA students, etc.. We know this behavior has disrupted the participation of some of our physics students in the past and the department is very serious about curtailing this behavior.

This behavior is prohibited by the UCSB Codes for Student Conduct, in which it is considered a form of hazing. It can also become a legal case of sexual harassment. Prohibitions against hazing and harassment extend beyond campus property, and beyond official UCSB functions. For example, whether coming from one student repeatedly, or from a group, demeaning female students in an off-campus informal study group is a form of hazing and subject to severe repercussions for the offenders.

What to do? Bullying behavior of this sort can be quickly stopped when offenders are warned about the legal path they are on. An early warning to offenders is the best approach because action can be taken well before a situation would be considered sexual harassment.

Experience has shown that targets of this behavior are not eager to report problems. If any student, male or female, is the target of or witnesses this activity, we urge you to report the issue to any of the following: The professor of your class, any department faculty, the Faculty Undergraduate Advisor or Department Chair, the Administrative Undergraduate Advisor, Jean Dill (dill@physics.ucsb.edu), the Director of Judicial Affairs, Stephan Franklin (893-4569, Franklin-s@sa.ucsb.edu), the UCSB Office of Equal Opportunity and Sexual Harassment/Title IX Compliance (893-5410, kristen.gibson@oeosh.ucsb.edu).

We insist that all of our students treat each other with respect and courtesy, so that all of our students may enjoy the benefits of studying and socializing with their peers.