
Physics 11A Section 8-9, Fall 2020

General Physics: Mechancis

Tuesday-Thursday 10:30:00-11:45pm

Online, via Zoom

Dr. Joshua Moss

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## Course Description

General Physics: Mechanics. PHYS 11 A, B, and C is a three semester course in introductory physics requiring elementary calculus. This course satisfies the lower division physics requirement for a major in physics, chemistry, geology, or engineering. PHYS 11A covers the basics of classical mechanics, including kinematics, Newton's laws, conservation laws and rotational dynamics. Lecture two hours; discussion one hour; laboratory three hours.

## Prerequisites

MATH 30, MATH 31; or equivalent certificated high school courses. MATH 31 may be taken concurrently.

## Course Outline

This class will meet synchronously via Zoom at the regular course times. The links for each class can be found on the class Canvas page. Physics 11A is divided into two components: lecture and laboratory. Lectures (and discussion) will typically cover about one chapter per week. In order for you to better absorb the material which is presented in lecture, you will be expected to read the chapter prior to the first lecture covering the chapter. You will be given a pre-chapter assignment in Mastering Physics to help motivate you to do the reading and get started on the material before we cover it in class. Classtime will be spent lecturing on the current chapter and in addition there will use an active-learning technique called Think-Pair-Share which involves answering questions on the lecture material using the polling feature on Zoom. There will be homework due for each chapter with the deadlines listed clearly on Mastering Physics. I expect that we will do in-class work in small groups throughout the semester. You are expected to upload your completed worksheets to Canvas following class. Attendance in laboratory is **mandatory**. Your laboratory instructor will provide me with your laboratory grade that I will use in determining your overall course grade. You must pass the laboratory in order to pass the class.

## Text and Materials

- *Physics for Scientists and Engineers: A Strategic Approach, Vol. 2 (Chs 1-21) (4th Edition)* by Knight
  We will cover Chapters 1-15. The text will be followed fairly closely and the table of contents is a decent outline for the course. We will average about one chapter per week. If you opt to use a different text, it is your responsibility to identify the appropriate material for readings, homework assignments and tests.

- Mastering Physics
  Use of the online homework system is required. Reading quizzes and weekly homework sets will be submitted and graded via Mastering Physics.
  See the instructions on Canvas for getting started.

- Physics 11A Laboratory Manual

- Scientific Calculator or Graphing Calculator
  You will need to have a scientific calculator with trigonometric functions (at the minimum). Most of you will have either a phone or a tablet with a decent calculator app.

## Add/Drop Policy

I have the following rules regarding adds and drops. These rules should allow me to maximize the number of students in this course. Missing two meetings in the first two weeks, without prior approval from me, will result in an administrative drop. If you are on the waiting list, you will only be added if you've been attending classes AND the lab. Labs will NOT be filled beyond the capacity listed in the schedule. The open seats will be filled via the LABORATORY waiting lists. If a spot in the laboratory section you are on the wait-list for becomes available, the first person will have the chance to see if they can fill in the corresponding spot in the lecture. If not, then the next person on the waiting list will have the chance and so on. You may drop during the first two weeks for any reason. After two weeks instructor permission is required and you must have a compelling reason. Not doing well is not a compelling reason because you have prevented someone else from taking that seat. I'm sorry, but this will be strictly enforced.

## Grading

Your grade wil be determined using each of these components:

1. Pre-class assignments - 5%
2. Homework - 25%
3. Laboratory - 15%
4. Midterms - 30%
5. In-class work - 5%
6. Final Exam - 20%

The final grades will be given as follows:

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| A: | 100% - 93% | |
| A-: | 93% - 90% | Depending on the final distribution of scores at the end of the semester, I may lower the boundaries on each grade, but these grade ranges are guaranteed to be the minimum. |
| B+: | 90% - 87% | |
| B: | 87% - 83% | |
| B-: | 83% - 80% | |
| C+: | 80% - 77% | |
| C: | 77% - 73% | |
| C-: | 73% - 70% | A curve may be applied to the exams, homework and lab grades at the discretion of the instructor. Do not assume that there will be a curve! |
| D+: | 70% - 67% | |
| D: | 67% - 63% | |
| D-: | 63% - 60% | |
| F: | 60% - 0% | |

### Pre-Class Assignments (5%)

Pre-class assignments (PCAs) include videos that explain some of the concepts that we will cover in class and short qualitative problem sets that you do prior to the start of each new chapter. They are there to encourage you to read and get started on the material before we cover it in class to maximize your understanding of the lectures. The assignments will be administered on Mastering Physics and will be worth 5% of your grade. They will be due on the day we start the chapter. **No credit will be given for completing the PCA late.** Your lowest score on the PCAs will be dropped.

### Homework (25%)

Homework consists of problem sets and the Dynamic Study Modules. Homework Sets are problems to facilitate your understanding of the material and and they will all be done via Mastering Physics. There are conceptual problems, "tutorial-style" problems, and end-of-chapter problems (calculations are the majority, but there are also some multiple choice, ranking or short answer). They are automatically graded and give you many opportunities to get the right answer, with the maximum number of available points reduced for each attempt. Late homework will be accepted up until the midterm and final exams but a penalty is applied for each day (10%) that it is late up to a maximum penalty of 40%. The late penalty is only applied to problems that are not completed

by the deadline. The Dynamic Study Modules are due thoughout the semester and are meant to help you understand the lecture and the concepts that we will cover. They are graded homework assignments although the style is quite different than the homework sets. The deadlines for Homework sets and Dynamic Study Modules are listed clearly on Mastering Physics and Canvas The lowest grade for the homework sets will be dropped when determining the final grade but all of the dynamic study modules count toward your grade.

### Laboratory (15%)

Each lab instructor will provide a syllabus describing how they will assess the laboratory portion of the class. They may consult me in designing their grading system, but ultimately it is their system. Grades from laboratory instructor may be normalized to adjust for significant differences in the grade distributions among the laboratory instructors. Typically, the section averages for 11A are 75-80%. As this class satisfies a GE laboratory requirement, you must pass the laboratory to pass this class. To reiterate: **If you fail the laboratory, you cannot pass this class!.** Do not miss labs without consulting you laboratory instructor (if possible) and do take them seriously.

### In-Class work (5%)

Occasinally we will do worksheets, think-pair-share questions, or Canvas quizzes during class-time either individually or in small groups. You are expected to participate in these activites and to submit your work via Canvas in PDF format. Your grade for the in-class work is effort based and will not be scored based on how correct your answers are. You will be learning will doing this work and learning requires making mistakes sometimes.

### Midterm (30%)

There will be two midterm exams during the semester. Laboratory experiments performed by the date of the exam are fair game for questions on the exam. The exams can have numeric problems, short answer questions, and multiple-choice questions. You are expected to submit your answers on Canavs but after completeing the exam, you will be required to upload your work to Canvas in PDF format. The answers you submit on your worksheets must match those you submitted to Canvas or no credit will be given. The midterm will be open book and taken via Canavs. Each midterm exam is worth 15% of your total grade.

### Final Exam (20%)

The final exam is comprehensive and will include all chapters covered throughout the semester as well as anything covered in the laboratory. As was done for the Midter, the Final Exam is open book and will be admistered via Canvas with the same expectation for submitting your worksheets to Canvas after the exam is completed. Check the university's exam schedule to determine when the final exam will be. I will announce the date and time in class but it is your responsibility to be there!

## Zoom and Netiquette

Students must be logged in to join the class meetings and office hours. The class meetings are recorded and will be available to all students via canvas shortly after the class has ended. Anything your microphone picks up while not muted is attributed to you in the zoom and on the recordings.

Students are encouraged to have video enabled in class, problem solving sessions, and office hours. Wifi quality does make this difficult for some students. Before turning on your video feed, please take a minute to look at and visually sanitize your background. If you have a pet that visits you during a Zoom meeting you are obligated to show them off to the camera and tell us their name in the chat. Students do NOT have permission to share videos or links, upload to social or sharing sites, or otherwise distribute recordings of class proceedings.
Some general rules to consider while we are working online:

- Identify yourself by your real name. Be mindful of your personal safety, and avoid including personal information, such as phone numbers or addresses, in discussion forums.
- Write in the first person (this is your opinion).
- Use humor, joking, or sarcasm with caution. We often rely on non-verbal cues such as facial expressions to communicate joking or sarcasm, but these cues are not always clear in an online environment.
- Challenge others with the intent of facilitating growth. Do not demean, harass or embarrass others.
- What you write is publicrespect your audience and be mindful of proper netiquette. Netiquette, also known as 'net etiquette,' includes using language free of profanity, proper tone and mechanics (including full sentences), as well as courtesy and respect for others' opinions. Instructors may interpret breaches of netiquette as "disruptive behavior."

## Student Health

If you are sick, stay home and do not attend class. Notify your instructor. If you are experiencing any COVID- like symptoms (fever, cough, sore throat, muscle aches, loss of smell or taste, nausea, diarrhea, or headache) or have had exposure to someone who has tested positive for COVID contact Student Health & Counseling Services (SHCS) at 916-278-6461 to receive guidance and/or medical care. You are asked to report any possible COVID related illnesses/exposures to SHCS via this link COVID-19 Illness/Exposure Report Form. Expect a call from SHCS within 24 hours.

## Academic Dishonesty Statement

The faculty of the Department of Physics and Astronomy will not tolerate academic dishonesty. Falsification of data, copying, unauthorized collaboration, plagiarism, alteration of graded materials, or other actions (as described in, but not necessarily limited to the CSUS Policy Manual) will be promptly reported to the Office of Student Affairs. The offending student will be penalized on the assignment in question. Serious infractions will result in course failure and a recommendation for administrative sanctions.

## Basic Needs Support

If you are experiencing challenges in the area of food and/or stable housing, help is just a click, email or phone call away! Sacramento State offers basic needs support for students who are experiencing challenges in these areas. Please visit our Basic Needs website to learn more about your options and resources available. https://www.csus.edu/basicneeds/

## Health Support

All of us benefit from support during times of struggle. You are not alone. There are many helpful resources available on campus and an important part of the college experience is learning how to ask for help. Asking for support sooner rather than later is often helpful. Student Health & Counseling Services at The WELL is here to help: call (916) 278-6461 and visit their website at https://www.csus.edu/shcs/

## Gender Violence Resources

CSUS is committed to providing an environment free of all forms of discrimination and sexual harassment, including sexual assault, domestic and dating violence, and genderbased stalking. If you (or someone you know) has experienced or experiences genderbased violence (intimate partner violence, attempted or completed sexual assault, harassment, coercion, stalking, etc.), know that you are not alone. CSUS has staff members trained to support survivors in navigating campus life, accessing health and counseling services, providing academic and housing accommodations, helping with legal protective orders, and more. If you wish to speak to someone confidentially, you can contact the CSUS confidential advocate at: (916) 278-5850 or contact WEAVEs 24- hour hotline (the primary provider of crisis services for survivors of domestic violence and sexual assault in Sacramento County) at: (916) 920-2952. You could also contact the counseling center at: (916) 278-6252

## Additional Information

- If you have a disability and require accommodations, you need to provide disability documentation to SSWD, Lassen Hall 1008, (916)278-6955 and then provide me with the correct documentation. Please discuss your accommodation needs with me after class or during my office hours early in the semester.
- I encourage you to work together on homework problems. BUT, sitting in a study group while others do the work and copying solutions will not likely enable you to get good results on the exams. Getting 100% on the homework and 40% on the exams will not earn you a good course grade.
- I have selected homework problems that I feel are, for the most part, representative of the material that you should know to pass this class. That said, there are generally one or two problems that will be very challenging. They are not meant to be punishment or to embarrass you, many people like to test themselves against hard problems and they are there for this reason.
- Please clearly write your name on all things that you hand in to me. Points can and will be deducted if I cannot read your name.
- While attendance is not mandatory for lecture and discussion (aside from first two weeks as noted in add/drop policy), keep in mind that I may emphasize material in lecture that the text does not. I also might give hints and tips.
- Your laboratory instructor sets the policies in the laboratory portion of the class, with the exception of the grading issues noted above. In that room, he/she's the boss.
- Per department policy (effective Fall 2004), no laboratory exemptions will be given. Please don't waste either of our times explaining why you deserve an exception to a policy that explicitly says "no exceptions."
- Please respect your classmates and me by turning off your cell phone during class. If you are expecting an emergency call (i.e. pregnant wife), please let me know. Repeat violators will be noted by me and are subject to a grade reduction.
- While I have no trouble ignoring your texting in class, your classmates may not. Please have respect for your classmates and do not do it. If something is more important than this class - deal with it, don't distract your classmates.
- Audio and video recording is prohibited in class at any time without express permission from the instructor. You may take pictures of the whiteboard as long as it does not disrupt the class.