

# PHYS1425: General Physics I - Mechanics and Thermodynamics

## Session 004

February 3<sup>rd</sup>, 2023, **Final version**

([Course Calendar](#) [Lecture notes](#))

Lecture Sessions: Monday, Wednesday and Friday 12:00-12:50pm

Lecture Location: [Wilson Hall 325](#) ([Directions](#))

Instructor: Xiaochao Zheng ([xz5y](#))

TAs/grader: Gang-Mu Liu ([wsg9mf](#)), Shrinidhi Nadgouda ([dmx7ug](#)),  
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Office Hours: see [PHYS1425 TA OH google sheet](#) shared across all 5 sections

### Before You Enroll

This is a calculus-based physics course, but we use only a limited amount of calculus knowledge (not as much as PHYS2415). On the other hand, you must have a solid foundation of trigonometry, and be ready for a challenging science course with 3 (4) assignments due each week. While typical work load is 4-6 hours per week outside lecture time, some people do spend significantly more (>10 hours).

### Course Goals & Objectives

Why is the highest degree in physics called “Doctor of Philosophy”, not “Doctor of Physics”? Will learning physics really change how you view the world? As a researcher, teacher, and continuing learner, I truly believe learning physics will change how you view and treat the world. Physics is a science that describes everything around us at the most fundamental level: Why does the sun shine? Why is sky blue? What is heat and what causes it? Can time flow backwards? Physics provides answers to all these questions, and many others you may have about the physical universe. Knowing there is a reason behind everything will help you to face your life differently, because

Nothing in life is to be feared, it is only to be understood

– Marie Curie

This course will get you started in physics, the most difficult subject in science. We will cover mechanics and thermodynamics, that underlie many of the basic phenomena in everyday life: forces and motion, rotation, equilibrium, energy conservation, oscillations, wave and sound, heat, and entropy. You will learn how to apply concepts and physical laws to solve problems. And you will develop problem solving skills that will serve as a foundation for your science, engineering or other career direction and your place as a rational, positive, and courageous member of our world.

#### By the end of the course, you will...

- Build a fundamental framework of concepts including forces and motion, energy, motion of solid and fluid, wave and sound, and heat and thermodynamics.
- Develop basic ability of solving problems by combining physical laws with math tools.
- Be able to check own solutions using estimation, common-sense check, dimensional analysis, limit checks, and using different physical laws.
- Be able to make sense of what you do.

### **More important, I hope you will (eventually):**

- When presented with a challenge, be it a physics problem, an engineering project, or a life crisis, be able to analyze the problem objectively, apply learned knowledge, prioritize, and solve the problem or develop a path to move forward.
- Look at the world around you and realize that there are laws behind every phenomenon. Realize how grand, yet simple Nature can be. Accept as human beings we are part of this beautiful universe, and be able to draw strength from it no matter what we face.

## **Course Organization**

This course will follow approximately a 2-to-1 ratio of lecturing vs. active learning. Note that because of midterm exams and snow days, the **M/W/F** sequence described below can vary from month to month or week to week, so check the [Course Calendar](#) and the week-by-week schedule on Collab carefully. *The following description is for weeks when Mondays and Wednesdays are lecturing and Friday is the “third/final day of learning” (HW due before class and quizzes held in class) of that week.* The M/W/F will be shown **in blue** hereafter in this section to indicate that they will vary from week to week, action items (assignments) and/or other important facts are shown **in bold**.

Each week, I will post on Collab the material to be covered in the following week in the form of reading assignments from the textbook and lecture notes that contain important concepts, examples, problem-solving skills, and videos for demos and example solutions. You must **complete the reading** and then submit a “**Chapter Summary**” assignment on GradeScope by 2am on **Wednesday**, i.e., prior to the second lecture of that week. Grading of these Chapter Summaries will be based on completion provided your submission has enough content. *Hand-written summaries are preferred to cut/pasting from your e-book.* Ideally, you only need this Chapter Summary to complete the homework and the quiz of that week rather than flipping through the textbook. Keep your Chapter Summaries organized, as these will form an important part of your learning portfolio. With the Chapter Summary done, you will be more prepared for the Wednesday lecture and the homework/quiz that follows.

Weekly **MasteringPhysics (MP) homework assignments** are due by 2am **Friday**. While this is an online platform, you are required to submit your written “**show your work**” (**SYW solution on GradeScope**) for specific problems to demonstrate how you approach the problem (which physical law is used), derivations, and numerical calculations when applicable. Grading of SYW assignments will be based mostly on completion, again, provided that your submission has enough content and makes sense.

Our **Friday lecture time** will be devoted to **actively learning** in the form of **weekly quizzes**: the first 10 minutes will be individual “thinking time”, followed by 30 minutes of group work, and we wrap up by asking volunteer presenters to outline the solutions so that all groups will be on the same page when we leave the room. The weekly quiz ideally should be submitted on GradeScope by the end of class, but the due time is set to 9pm (same day) in case you need more time to write the full solution. You can continue working with your group members after the lecture time, but you must write your solution independently.

**Your in-class group assignment** will be random and partially based on the **Pre-semester survey**, and I’d like to finalize the group assignment by the Add/Drop deadline and keep it fixed throughout the semester if possible. The same group(s) can be considered as your “go to resources” when you continue studying course material and doing homework assignments. You will not grade or evaluate your group members (wouldn’t that take the fun out of group activities?). I hope this means everyone will only gain, and never lose, from group discussions.

We will have **three exams (two midterms and a non-cumulative final)**. During the week of the midterms there will be no HW due, but you should review your chapter summaries. The exam will be **close-book and a formula sheet will be provided in advance**. The exams will be held in-class and solutions submitted both on paper and on Gradescope, will be pledged work and no collaboration and/or outside help will be allowed. Those requiring extra time for SDAC accommodation should reserve a seat with the SDAC as early as possible.

## Textbook and Other Study Material

The **reference textbook** we will use is **Giancoli's Physics for Scientists and Engineers, 5<sup>th</sup> edition, with Modified MasteringPhysics** for completing homework assignments online. For Spring 2023 semester, this book will be offered through UVA BookStore's "Inclusive Access" program. ALL students enrolled in the class will have immediate access to your digital course materials through UVA Collab for the first 2 weeks of class—for free – starting one week prior to semester start. **After the Add/Drop deadline, your student account will be charged ~\$70**. If you choose to drop the course, there will be no charge to your account. On the other hand, if you stay with the course, you must convert to a paid subscription to avoid interruption of accessing to HW. This inclusive access program is optional but if you choose to acquire your textbook elsewhere, you must opt out by the Add/Drop deadline to avoid being charged and you will lose online access after you opt out. Due to the special pricing, no refunds can be processed. This program aims to offer all students accessibility and affordability. If you have any questions regarding the program, please email [UVAInclusiveAccess@virginia.edu](mailto:UVAInclusiveAccess@virginia.edu)

We will use **Modified Mastering Physics** to administrate the online portion of the homework assignments.

**Learning portfolio:** Your own weekly chapter summarizes should form the foundation of your learning portfolio. After completing the homework and the quiz, go back to your chapter summaries and summarize strategically what type of problems you solved and how. Before each exam, put all 4 summaries together to use as your own study guide. By the end of the semester, you should ideally have condensed all 20 textbook chapters into a comprehensive yet concise study guide that should be sufficient for preparing for the final exam.

**Course material:** All lecture notes and solutions (homework, quiz, exams) will be posted on Collab under Resources. Use lecture time to listen and think, rather than speed-writing notes unless that's what you enjoy.

## Assessments and Grading

The **final grade** for this course will be determined from: 30% Weekly homework assignments (that include the Chapter Summaries, MP assignments with the SYW), 20% Weekly quizzes (including a small portion from attendance), and 50% total from the three exams that includes 12.5% each for the two midterms and 25% for the final exam.

**Chapter-Summary Assignments:** These will be posted as assignments on GradeScope on Collab and are due by 2am on the second learning day of the week. Hand-written summaries are much preferred to cut/pasting from your e-book. These chapter summaries will be graded based on completion.

**Weekly MasteringPhysics Assignments:** These are administered on MasteringPhysics (MP) and consists of 7-8 problems. Some of the problems will require written work – see SYW assignments below.

**Weekly Show Your Work (SYW) Assignments:** Each week, I will post an outline of MasteringPhysics assignment problems on GradeScope and indicate which problems require written work. You must submit your written work through GradeScope to receive the SYW portion of the grades. While these technically do not add on to your MP assignment, some found it time consuming because writing down work requires thorough thinking of how you solved the problem. On the other hand, this is exactly why SYW is required as it helps to solidify concepts and problem solving skills.

**On Weekly Quizzes:** These are typically 1-2 written problems (per quiz) that are based on the material you have learned in the previous and the current week, and have practiced on by doing the homework assignments on MasteringPhysics. The quiz problems will likely be challenging, and working in groups will help. The quiz will be graded based on performance.

**On the two Midterm Exams:** These will be **close-book exams and a formula sheet will be provided beforehand (for review) and along with the exam.** All exams will be held in-class. Printed exam will be handed out, and solutions should be submitted through GradeScope by the end of the exam time. You should also submit your exam paper in case the electronic submission had an error. You must pledge that you have not received or given aid on these exams.

**On the Final Exam:** The final exam will be in a similar form as the midterms. However, the final exam will be longer (both in time and length) and will focus more on your problem solving skills than memorization, thus will be counted more towards your final grade.

Because your written work will be graded by human beings (myself, TAs and graders), neat handwriting will be greatly appreciated. Label your problems clearly as "Problem 1", "Problem 2", etc, and box around your final answers. Use of a black or blue colored pen (or use a pencil) is preferred. Please avoid red color except for Chapter Summaries.

**Grading thresholds:** At the end of the semester, your numerical grade will be converted to a letter grade. The so-called "grading threshold" (the cutoff grade for A, B, C, etc) follows roughly the default Collab values. No "curving" will be done to exam grades, but the instructor may adjust these thresholds each semester depending on the difficulty level of the exams. See "Grading Policy" below for more details.

**Academic Integrity:** Posting assignment and/or exam problems from this course to online "study helper" websites is a violation of the honor policy. **Such posting will be tracked and possibly resulting in the whole class receiving zero for the corresponding problem.**

## Grading Policy Regarding Multiple Sessions

Each session instructor may assign different weekly assignments and exams. To ensure equity across different sessions of the same course (PHYS1425), the following grading policy will be observed across all sessions: By the end of the semester, it is expected that roughly 40% of those who complete the course may receive A (including A+, A, A-). In addition, historically, the class average has been between B and B+ (class GPA between 3.0 and 3.3).

In addition, for multiple sessions that follow the same active learning pedagogy, the following grading partition will be observed: 50% of your final grade will be from weekly assignments that includes 20% from weekly quizzes; 50% of your final grade will be from three exams that includes two midterm exams (12.5% each) and a final exam (25%).

## **Course Policy**

### **Attendance Policy**

Attendance will be taken for each active-learning session (group activities). Attending 10 out of 12 such group activity sessions will earn you full attendance grade, which will contribute to a small portion of your 20% quiz grade.

By the end of the semester, those of you who fill out the course evaluation will have the lowest HW grade exempt from the final grade. Additionally, each of you will receive a “free pass” on quizzes which means one of the weekly quizzes is exempt. This should take care of occasional illness or other unexpected “bad week” reasons for missing the HW or quiz. Please note that Chapter Summaries are not excused, and you should still submit the Chapter Summary for the week where your HW or quiz is exempt.

### **Late Work Policy**

This course has a packed schedule. Keeping up your course work – completing your reading, HW and quizzes, for example – on time is really important. For this reason, the following late work policy will be in effect this semester:

- late work on MasteringPhysics will observe a -0.5%/hour penalty, capped at -20%;
- SYW and quiz submission to GradeScope: if GradeScope submission is closed, you may email your work (as a single PDF file) to your instructor for late uploading. In this case, the token policy (below) will be in effect;
  - Each of you are given [n] token to use for the whole semester. Each late uploading (by the instructor) will cost you a token, but see more details below;
- Submission of SYW and quiz after the solutions are posted on Collab (typically one week \*after\* the due date) will receive a -20% penalty in addition to the token.

Lateness due to illness or family emergency is exempt from this token policy, but lateness due to other reasons such as “I have too many projects due this week” or “I have [this or that] practice” or “I completely forgot the assignment was due” or “this course is too hard”, as such challenges are considered typical for college learning (and life in general). Occasionally, someone would email me with “I thought I uploaded it but just realized I didn’t”. This type of excuses will also cost you a token.

Note that the above late policy is design to keep our learning on schedule. If you find the above policy difficult to observe, please feel free to discuss with your instructor and we can work out an alternative solution.

### **COVID/Illness Policy**

We will follow UVA and CDC guideline regarding COVID mitigation in the classroom and during in-person office hours. Should you have flu or Covid symptoms, please do not come to the classroom or in-person OH. All assignments can be done outside the classroom (including weekly quizzes). See below for more on remote learning.

#### **Strategy for remote learning:**

- Check Collab for Zoom link
- Call in to Zoom during lecture time or watch Zoom recording after the lecture
- Follow weekly schedule closely and complete all assignments on time

- Know your group (via self-organized communication channel such as group-chat). This way, you will have access to group discussions and peer-assistance for completing the quizzes and homework assignments
- If needed, check out TA OH schedule (see page 1 of this document) and email the TA to request for Zoom access. They may be able to hold OH both in-person and on Zoom.

### **Equity and Inclusiveness Policy**

This course provides an inclusive space and all people are welcome regardless of their race, age, nationality, gender, and gender identity. Since we will be interacting with each other in class, we must show respect and exhibit courteous and collegial behavior throughout all class experiences. For more information, the Code of Conduct of the Physics Department can be found at <http://www.phys.virginia.edu/DEI/CodeOfConduct/>

### **Honor/Academic Integrity Policy**

I trust every student in this course to fully comply with all of the provisions of UVA's Honor Code. By enrolling in this course, you have agreed to abide by and uphold the Honor System of the University of Virginia, as well as the following policies specific to this course:

- You may collaborate on the weekly homework assignments, but each one of you must submit your solution independently. Copying solutions from online “study helper (=cheater)” websites is a violation of the honor policy.
- Posting assignment and/or exam problems from this course to online “study helper” websites is a violation of the honor policy. **Such posting will be tracked and possibly resulting in the whole class receiving zero for the corresponding problem.**
- You will work in groups on the weekly quizzes, but each of you must write and submit your solution independently. Copying others' solutions is a violation of the honor policy.
- You must complete your Chapter Summaries independently.
- You must not give or receive any help on the midterm and the final exams.

If achieving knowledge through honest work is not your goal, please do not take this course.

## **Our Team**

My experience as an experimental physicist tells me that being good as an individual is important, but it only gets you to 80% of your potential. The rest comes from team work, and sometimes, a bit of luck. Our class will be diverse, some of you have not taken any physics class, while some may have taken both Physics 1 and 2 classes but still have to be here. I believe everyone has their own place. If you are comfortable with physics and problem solving, please lead the discussion within your group and/or volunteer to present the quiz solution outline in class. This course will be challenging for sure, but should not be boring nor tormenting (I hope not, at least).

You may not realize, but most of our TAs are recruited from previous terms' classes and they will be on your side every week: They will help to explain your homework problems, guide your quiz discussion, answer your questions during office hours, and help monitoring online Piazza chat room after-hours. **In turn, if you enjoy the course, please consider working as a TA in a future term (email me, please).**

## Accessibility

There are plenty of opportunities should you wish to discuss course material or other matters with me: Office hours are offered mostly in-person, email inquires are always replied within 24 hours on weekdays and often more promptly (within reasonable hours) if it's about an assignment that is due soon. In summary, I wish I can be there whenever you need me, and please let me know how I can help.

## Special Accommodations

Students with disabilities may wish to work with the Student Disability Access Center (SDAC) to discuss a range of options to remove barriers of learning, including official accommodations. Please visit their website for information on this process and to apply for services online: [sdac.studenthealth.virginia.edu](http://sdac.studenthealth.virginia.edu). If you have already been approved for accommodations through SDAC, you will be contacted by email (from me) and we will develop an implementation plan together. If you are in the process of evaluation, please let me know as well. Our goal is to accommodate everyone's needs as much as possible without lowering learning standard.

## Words from a future you (well almost a future you)

From Spring 2023 class, one of the End-of-Semester survey question is "Looking back, what would you like to be told regarding this course, in particular during the first 4-6 weeks of the semester?". I copied some of the answers below, un-edited, and I hope you find them useful. At the minimum, use the next 4 pages to practice the skill of "skimming" (you may need it when completing reading assignments):

*Attend all the lectures, don't skip any and pay attention to the homework problems and fully understand them and don't rush them the night before.*

*Go to office hours if your struggling with the homework*

*All the resources and material you need for homework, quizzes, and exams are all provides, you just need to make sure you review and ask questions!*

*Its not as hard as people make it seem, just do the chapter summaries, HWs and quizzes diligently and it should be fine (even if you choose to miss some of the lectures).*

*The course is very fair; what we learn is what is on the tests and quizzes, so as long as you understand the problems in the homework, you will do well.*

*This course is not as hard as you thought it will be.*

*It is important to redo the weekly quizzes prior to the midterms because they are meant to be harder than the actual midterm so you would have good practice for it.*

*I wish I was told that practicing timed questions is helpful for the exam. On the first exam, I found myself running out of time and should have focused more on practicing solving the equations more quickly. I also think it's valuable to know that doing practice problems is the most effective way to study for the exams (in my opinion), as opposed to rewriting notes or re-watching lectures.*

*After class, look over notes for 10-20 minutes. It will help your memory so that you are not essentially relearning everything before a midterm.*

*Sometimes, a concept in lecture will be put word-for-word on the exams.*

*Make sure to take advantage of the free tutoring offered by the school. It is okay to not be fantastic at physics-- everybody has different skillsets, and you don't have to do fantastic on every exam to get a good grade*

*It's very hard but go to office hours as the TAs are all super nice and helpful.*

*Try your best to come to class every day and go to office hours! All the TAs and Professor Zheng are immensely helpful in guiding you in the right direction! Also, make sure to do your work on time, the workload is not terribly bad as long as you stay on top of it.*

*It starts off relatively easy, then the middle part is a lot harder. Study.*

*Study all the examples from the lecture notes (even ones not covered), homework problems, and quiz problems for exams.*

*This is a serious class, just doing the chapter summary is probably not good enough. Avoid depressants.*

*Do not think because the beginning is easy that it is okay to slack off. Make connections between units. DO NOT DO DRUGS.*

*Professor Zheng and the TAs genuinely want to help you succeed and are more than willing to answer questions, which is really helpful, especially because the class moves pretty quickly.*

*Please do the examples outlined in the weekly lecture notes, or at least come to class with them written out so that you can solve them and gain practice during lecture. Also read up on the lecture prior to the in class portion so that you will be less lost. Basically, complete your chapter summaries in advance. And do the practice problems she provides in the weekly lecture notes! Go to office hours, even for a quiz. She is very kind and will be patient with you, no matter how much you are struggling.*

*Completing the chapter summaries before class helps a lot with understanding the lectures.*

*Go to office hours and don't worry, just keep working on it. If you put in the time to understand things and seek out help when you need it you will figure it out and it will start to come to you. just stick with it, read the textbook examples, and always go through all the steps. I spent so much time on physics (not everyone spent as much time as me, i could see things coming easier to some people) and physics lab assignments that I ended up liking physics by the end of the semester! I can think "physically" now, so just keep yourself in the game*

*Stay on top of the work, study every day, ask questions, go to office hours*

*I thought that the information given to us gave us a very clear idea of what was expected. For future students, I would tell them to make sure to put in a lot of work at the beginning of the semester especially. Once they learn the best way of studying that works for them, then they can ease up on the time spent (work smarter not harder).*

*Do the Homework on time, it really helps*

*Make sure to always start the homework early, and try to spread out the work over the course of several days. It will make the class much easier in the long run. Also, build good connections with your group members, as they will be the ones who always end up helping you.*

*I would like to be told to not worry too much about the tests since they are very fair. I think the best way to prepare for the tests would be to just keep up with the homework and quizzes in class. If you review the quizzes and homework before each test, then the test will not be bad at all.*

*Learn to get into a rhythm with the order of assignment completion. It is often the same due dates each week, so if you can plan your schedule ahead to find time on the same day of*



*each week to complete each assignment, it can be heavily beneficial later on when a concept may be more challenging to you.*

*Study force and energy extensively! These concepts are used throughout the rest of the course and there is little mercy if you cannot work with force and energy fluently.*

*Do the practice problems, while homeworks are very useful, the fact that you are given further examples and problems will make the rest of this course so much easier, so don't disregard what the textbook is trying to help you with.*

*do chapter summary and review before starting the HW*

*Develop a study plan early on and form a study group with your peers so that you don't fall behind in your understanding of any of the course material.*

*This class takes off. I knew it would be hard, but I don't think I was really prepared. You will be spending a lot of time in this class. Go to office hours for help with the homework/study, then rework the homework and quiz problems to study for the exams. Form study groups. Do the chapter readings before lecture, then go to lecture to relearn/solidify the concepts.*

*It is going to be a lot of work, but you have the resources available. Reach out when you have questions, and USE YOUR NOTES! A lot of homework and quiz problems are similar to the ones done during lectures.*

*Plan ahead and do the homework earlier in the week rather than later.*

*I would like to be told to start the homeworks early. They are too long to procrastinate on. Also, the exams are very difficult, but doing the homework problems before the exam helps. The lectures are not as helpful as the homeworks, but you should still go to them.*

*Something I believe is especially important in this course is to spend more of your time looking at the in-class examples and lecture notes because they are quite important for exams since you may find many similarities.*

*Take your understanding of the first third of the course seriously because the knowledge and skills learned are foundational to the rest of the semester. Create a routine for your weekly assignments so that you have time to seek help if need be. Attend office hours regularly, I would not have completed the course without them. But also, do not expect office hours to be the solution to all of your problems, you will have to first struggle and fail to succeed. Don't try to copy every word or line from the lecture notes for your chapter summaries. Try to consolidate material and organize your chapter in a way that is easily digestible. If a certain topic is unclear, mark it for review and move on; often times the way things were explained verbally in class made it seem much simpler than the way it was explained at length in the lecture notes*

*please...do the homework...*

*Nothing, this course was everything i expected it to be*

*I wished it would have been emphasized that the lecture goes very fast, faster than I even expected. I also think it would have been useful advice to find out how you can learn the information earlier on. For example, personally, I thought it would help me to read through the textbook notes, however, later on, I found it better for me to read the lecture notes (shorter and main points highlighted), and try to go through the practice problems on my own.*

*I would have liked to know that the active learning style of this course is a major consideration for the student's grade in the class. Notes and homework have significant weight, so they should be taken seriously and done on time. I would have also liked to know that taking notes from the textbook allows students to cover special cases on topics that could help in problem solving in the future (on quizzes, exams, etc.).*

*Nothing wrong with asking others for help!*

*READ AHEAD OF THE LECTURE.*

*Good notes are very important, and your group is a very good resource for homework help.*

*Start work early and definitely try to read the lecture notes/textbook before the lecture. Go to office hours and ask questions if you don't understand a concept! Professor Zheng is very nice and wants you to do well in this course.*

*Office hours helps immensely if you are struggling with homework. I found myself to be doing fine coming into this course, but I definitely see the value in reaching out to TAs if you have any questions on homework or concepts that might require explaining.*

*Keep up with your work all semester so form those habits during the early weeks*

*I learned that reading through the textbook and making a list of equations or key concepts is very helpful*

*Don't worry about the calculus*

*In-class lectures are vital for the understanding of topics. Recorded lectures are also extremely helpful if you do not completely grasp a concept.*

*Look more for the applications of concepts and the difficult questions. Review specifically how the content is done.*

*Study more.*

*This class can be difficult and you will probably have times you don't know what you're doing at all even. But this is normal with problem solving and especially if you're new at physics. Overall, if you put in the time, this class isn't as hard as people can make it out to be, and you'll do just fine.*

*It isn't too bad once you get into it. Just make sure you have a good connection with your lab group early on, since there WILL be times when you just can't figure out what you're doing wrong.*

*Go to office hours and review the chapter summaries. Also make the chapter summaries very thorough. I learned more from chapter summaries when doing them by hand.*

*Start on your work early.*

*Do the chapter summaries.*

*This class goes over a lot of information, so it is important to keep up. It is ok to take days off and the resources are there to catch up, but make sure that you stay up to date with the course. Professor Zheng genuinely cares about her students. If you feel like you need help in the course, don't be afraid to reach out!*

*Doing the Mastering Physics HW ahead of time will save you a lot of stress. Also, redoing the HW and practice exam problems will be great tools for exams.*

*Its hard*

*If you put in the effort, you can be successful in this class. It is a very hard course, however with enough studying and practice you can do well.*

*The work may look intimidating, but everything will eventually prepare you for the exam, so do all the work!!! Read through the textbook for chapter summaries, do the homework on time, and take good notes during lecture.*

*Be prepared to put work in, but you will get a lot out of the class.*

*Make sure you do all of the homeworks as early in the week as possible because if your stuck with a problem that is a big indication of what concept you don't understand.*

*Understanding the equations is the most important part, and make sure to go to class if you don't understand how to solve the examples in the chapter summary. It's really easy to fall behind in Physics 1, and you don't want to be playing catch-up before the first midterm.*

*Make sure to have a good foundation with the early content because it all builds on each other and having a weak foundation will hurt a lot later*

*Doing example problems is the KEY to studying.*

*Do not let yourself fall behind, follow along with the pace you are taught.*

*Try to do a lot of practice problems so you give yourself much more preparation! The best way to absorb the material is by yourself and through practice so once you have a rhythm down, it'll be like second nature.*

*You are absolutely capable of doing well in this course. Do not let the material intimidate you, everything is broken down into understandable/approachable steps.*

*Get homework done early*

*Do the homework assignments bit by bit throughout the week so you don't do them all in the night before*

*Study more, it will all be ok in the end, and enjoy the journey (this is my 1st semester here)*

*I think I was adequately prepared, but I would tell new students to review notes immediately after class and either look up or seek help with unfamiliar concepts. If you do not understand one concept, it will snowball into having difficulty with later material.*

*Stay on top of work. It's really not that hard unless you fall behind*

*Physics is a field that requires a base level understanding of the principles behind every problem. If you can grasp the idea and understand where formulas come from it is much easier to perform well on the quizzes and homework because the problems are intuitive rather than based on the memory of a formula.*

*Take good notes during class, and if you are unclear on certain topics take your own notes on them when you get the chance.*

*I believe we were told to get ahead of our assignments before they stacked up, so even though I had issues with scheduling/procrastination towards the end of the semester I think I just needed to heed those introductory words.*

*Do the work; it will pay off.*

*I would say that it is very important to make sure that you keep up with the work and thoroughly understand each concept before attempting to learn the next one. Otherwise, you could find yourself in a situation where you have an exam and are forced to learn 4 weeks of material in a couple days.*

*I would say that don't be afraid to ask questions, to other students, to TAs, and finally Professor Zheng (preferably in that order). Often times I fell behind because I was too afraid to ask for explanation on things.*