



PHYS 2425.03E

University Physics 1

COURSE SYLLABUS: Fall 2025

INSTRUCTOR INFORMATION

Instructor: Dr. Robynne Lock

Office Location: STC 238

Office Hours: TBD

University Email Address: robynne.lock@tamuc.edu

Preferred Form of Communication: Email

Communication Response Time: 48 hours

COURSE INFORMATION

Materials – Textbooks, Readings, Supplementary Readings

Video “textbook” https://youtube.com/playlist?list=PL6gcWzXb-Ezp0gJX68ttmpz6_Ts8TXTDC

A free textbook: W. Moebs, S.J. Ling, and J. Sanny, *University Physics Volume 1*, Open Stax, Available freely online at <https://openstax.org/details/books/university-physics-volume-1>

Free nontraditional textbooks:

- G. Elert, The Physics Hypertextbook, Available freely online at <https://physics.info/>
- S.A. Hill, How Things Move, Why Things Move, Available freely online at <http://howwhy.sahill.us/>

In lieu of a course packet or lab manual, all class activities are digital and can be found in D2L or linked in D2L. Many activities are in the form of Google Docs. You should be able to work off of a laptop/tablet/etc. during class (class laptops are available).

However, sometimes the internet in our classroom is not great, so you might want to download or print activities before class.

The syllabus/schedule are subject to change.

If you want a more standard textbook, my favorite is Knight's Physics for Scientists and Engineers. I don't require it because it is expensive, but if you find a cheap copy of an old edition, I highly recommend it.

Course Description

This is a calculus-based introductory physics course in mechanics. Topics include momentum, dynamics, energy, and kinematics.

University Catalog Description

Calculus based physics course in mechanics for science, mathematics and engineering students. Prerequisites: You must be currently enrolled in Calculus I or have previously taken Calculus I.

Student Learning Outcomes (Should be measurable; observable; use action verbs)

1. Students will be able use momentum to describe a physical situation and calculate the motion of an object using these quantities.
2. Students will be able to represent the forces on an object in a physical situation and calculate the resulting motion using Newton's Laws.
3. Students will be able use energy to describe a physical situation and calculate the motion of an object using these quantities.
4. Students will be able to precisely explain and calculate motion using the concepts of position, velocity, and acceleration

COURSE REQUIREMENTS

Minimal Technical Skills Needed

Students should be able to use D2L (myLeo Online), view videos on YouTube, use a calculator, use Excel and/or a graphing calculator or app, convert work to a pdf, take screenshots, use a variety of online communication methods such as Zoom, Discord, D2L, and email.

Instructional Methods

This class is being taught in studio mode. Studio mode is a student-centered active learning environment that blends lecture time with lab time. Lecture and/or readings will be used to introduce topics. The majority of class time will be focused on group activities. Activities will include conceptual work, labs, and problem solving. Activities will be completed in groups of 2-4. The instructor will assign groups. Groups will be changed 2-3 times during the semester.

Physics education research has shown that students learn best when actively engaged in class. Studio mode has been implemented at many universities and has been found to have positive impacts on conceptual understanding and problem-solving ability.

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Physics can feel hard, but you can do it if we all help each other. It is very important that you ask questions, share your work, discuss your ideas, and ASK QUESTIONS.

Student Responsibilities or Tips for Success in the Course

- Students should keep handwritten notes and plans. Handwriting helps your brain process information. Organize your notes so that information is easy for you to find when you need it.
- When watching videos, take notes and pause the video to give yourself time to process. Work examples with me.
- Learn about learning. The most important thing you can learn in college is how to learn well. You will need to learn new skills and knowledge throughout your whole life.
- The most important thing you can do is to **ask for help** when you need it. **I love when students come to my office!** Then I can help you, and you are also helping me become a better teacher.

My AI policy

However you use AI, I want you to remember that the purpose of this class is to **learn**, and the way you use AI should reflect that. You should also know that AI is still getting a fair bit of physics wrong, so you can't just trust whatever it tells you. If you are using AI to help you with homework, you're not going to learn anything just copying down what it gives you. You can ask it the question and then try to understand what it is doing. If you do use AI to help you, you are required to document this. Write in your work how you used AI.

You might try using NotebookLM. That lets you upload specific sources, and you will know where the answers are coming from.

GRADING

What do grades mean? Why do we grade? What are grades used for?

You have probably spent over a decade in an education system in which you are regularly assigned grades. These grades may reflect completion of assignments, timeliness, understanding of the material at a snapshot in time, a difficult time in your life, how many demands there are on your time, and many other things. Grades, in theory, should have been used to determine your readiness for college and used in college admissions. Grades, in theory, could be used by potential employers to determine if you can perform well in their jobs. But do grades actually predict your success in college or in life, however you may define success? As it turns out, grades

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are surprisingly poor predictors of “success” however you may define it (S.D. Blum, *Ungrading: Why rating students undermines learning (and what to do instead)*, Morgantown: West Virginia University Press, 2020).

What is your personal relationship with grades? I will share mine, and I want to hear about yours.

I have suffered from anxiety since elementary school. I am now diagnosed with generalized anxiety disorder and social anxiety disorder. I am medicated for these things, and I have coping mechanisms. The pandemic certainly did not help. How does this relate to grades? My coping mechanism as a child and a teenager and as a college student was perfectionism (not healthy by the way). If I was perfect, then I could never be criticized, and I would not be hurt. I learned to “play the game” of school and became a straight A student. There may have been feedback on my assignments, but I did not read it because that would hurt. (I will add here that there were many factors in my life that made it possible for me to be a straight A student. I was lucky in that regard.) Once I was in high school, I learned the ins and outs of grade calculation and GPA calculation and how much various classes counted. In one extreme instance, I took a class dual credit to avoid the high school teacher who was notorious for giving bad grades. In college, I was careful not to overload myself and didn’t take some classes about things I wanted to learn because I was afraid they would hurt my GPA.

How do you feel about learning? Do you enjoy it? How does learning relate to school and grades? Again, I will share my story, but I want to hear yours.

I love learning. My constant anxiety about grades ruined that. I am able to love learning again, and I do with a passion, but I lost that for a while. One example is that I love to read, but when I had to read and take quizzes for the Accelerated Reader (AR) program, it stopped being fun and all I felt was stress. When I took classes, my goal was “make an A”, not “learn cool stuff”. Of course, there were plenty of times I did learn cool stuff, but it was never as much fun as it could have been.

How can we return the focus of our class to learning instead of stressing about grades?

For several years, I used standards (learning goal) based grading. This is an improvement over traditional grading because grades directly reflect what you can do, and I allow many forms of assessment and reassessment. It doesn’t matter when in the semester you learn something as long as you learn it eventually. However, I was unsatisfied with this system. Students had still been learning to game the system to get the grades they want rather than focusing on learning. To be fair, there is learning happening and there are always students focused on learning to some extent. It’s just not quite where I want it.

Now let’s get to the actual plan for this semester. You’re going to learn. I’m going to help you learn. Your classmates are going to help you learn. I’m going to give you feedback. The GA and the LAs are going to give you feedback. We’re going to try to find a reason

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for you to want to learn physics. I will not be putting numbers on any of your work. You are going to have a voice in what grade you get. We will be using a blend of qualitative grading and standards based grading.

This semester's plan is inspired by Susan Blum's book that I referenced in the first paragraph: *Ungrading: Why rating students undermines learning (and what to do instead)*. This book contains essays by 13 faculty members in both K-12 and college settings, in humanities and sciences, and their experiences in ungrading. The plan is also informed by the multiple conferences on grading that I have attended and the book *Grading for Growth* by David Clark, Robert Talbert, and Linda B Nilson. You can actually find my class (in its 2019 format) as a case study in that book.

Grading scale

In this class, I use standards-based grading. This means that your grades are determined by your scores on specific learning outcomes. I assess how you are doing on most learning outcomes through weekly individual progress assessments. Each question will be labeled with which learning outcomes are being assessed. Learning outcomes related to your learning skills will be based on your participation in group work during class and doing homework.

The grade calculation is as follows:

- 10% Momentum and impulse
- 20% Dynamics
- 10% Work and energy
- 10% Kinematics
- 5% Rotation
- 10% Problem-solving
- 5% Units
- 10% Vectors
- 10% Learning skills
- 10% Communication

(Homework and daily in-class group work are part of learning skills.)

The letter grade scale is:

- A 87.5-100%
- B 75.0-87.4%
- C 62.5-74.9%
- D 50.0-62.4%
- F 0-49.9%

You **MUST** turn your work in on time. I don't accept late work (because my past students told me not to). (I will in extenuating circumstances. I'm not a monster. ☺)

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Individual progress assessments will be weekly, and **you can make revisions to them as many times as you need/want to**. There will be time to work on revisions during class. You are required to talk to an instructor about your revisions before turning them in, or I will not evaluate them.

You should expect to need to make revisions on most individual progress assessments. This is not a bad thing. You should not feel discouraged. Everything I submit in my professional career needs to be revised. This is really closer to how real projects work. I am just holding you to a high standard and trying to support you in learning as much as possible.

Hey this grading scale has grades in it even though I've been reading a book about ungrading!

-Well, we all know that I'm part of a system in which I am required to assign grades. I do hope this system will allow you to focus on learning instead of stressing about grades. If you put in an honest effort and really listen to feedback and work to improve, you should be able to pass the class. I don't give a lot of D's and F's. Those are for people who don't turn in important assignments or miss a lot of class.

A note on the limitations of numbers

-So, you're all science, math, or engineering majors, right? I am going to guess that you like numbers and take comfort in clear indications of right or wrong. You might have been frustrated with English classes where it was unclear how to do things correctly. Okay, so here's the thing, numbers are only as good as the system used to assign the numbers. A lot of scientists don't spend time thinking about that. Depends on their background and such. I am a physics education researcher. I do both quantitative and qualitative research. I am very aware of the limits of assigning numbers to represent anything, including demonstrations of understanding and skills. I have spent a very long time thinking about this and have taken into account other faculty members experiences with these systems. Will this be perfect? No. Will I learn things along the way? Yes! I am going to get feedback from you. We're doing this together. If you think something about the system is wonky, let me know. I'll try to fix it. **This is all about communication.**

Okay, but what about all the other assignments and class time?

- Find our current unit on the left hand content menu.
- There will be reference material for you to read/watch before or after class.
 - o I have video lectures for almost all of the material. While they contain similar content to in class lectures, the examples are normally different, and I know people like more examples. Video lectures may be required as homework.

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- I have a page called Textbooks/reference materials, and you can use anything in there if you are looking more perspectives on the course material.
- I will lecture some. I try not to lecture more than about a third of total class time on average.
 - You need to be actively engaged to learn, and a lot of people have a hard time actively engaging during lecture (myself included).
 - Make sure to take good notes during lecture. Some of you are probably already expert note takers, but some people probably aren't. If you are taking pictures of the board, rewrite the board in your own handwriting from the pictures later to help yourself actually process the material.
 - *Do I have to take notes?* Yes? How else are you going to keep track of everything?
- You will work on group assignments during class.
 - The GA, LAs, and I will help you through it. I will strive to be clear on what you should be learning from each assignment.
 - Group work will be checked during class to make sure you are understanding what you need to.
 - *Do I have to work in a group?* Yes, if your group is working well together, you will learn more this way. I am fully aware that learning to get the most out of group work is difficult, and I am trying to figure out how to teach these skills more deliberately. I am open to suggestions.

I am hoping that this system will allow you to focus on and enjoy learning. I am sure that this system is not perfect, but I am also sure that the traditional system is flawed. I want to do better.

TECHNOLOGY REQUIREMENTS

LMS

All course sections offered by East Texas A&M University have a corresponding course shell in the myLeo Online Learning Management System (LMS). Below are technical requirements

LMS Requirements:

<https://community.brightspace.com/s/article/Brightspace-Platform-Requirements>

LMS Browser Support:

https://documentation.brightspace.com/EN/brightspace/requirements/all/browser_support.htm

YouSeeU Virtual Classroom Requirements:

The syllabus/schedule are subject to change.

<https://support.youseeu.com/hc/en-us/articles/115007031107-Basic-System-Requirements>

ACCESS AND NAVIGATION

You will need your campus-wide ID (CWID) and password to log into the course. If you do not know your CWID or have forgotten your password, contact the Center for IT Excellence (CITE) at 903.468.6000 or helpdesk@tamuc.edu.

Note: Personal computer and internet connection problems do not excuse the requirement to complete all course work in a timely and satisfactory manner. Each student needs to have a backup method to deal with these inevitable problems. These methods might include the availability of a backup PC at home or work, the temporary use of a computer at a friend's home, the local library, office service companies, Starbucks, a ETAMU campus open computer lab, etc.

COMMUNICATION AND SUPPORT

If you have any questions or are having difficulties with the course material, please contact your Instructor.

Technical Support

If you are having technical difficulty with any part of Brightspace, please contact Brightspace Technical Support at 1-877-325-7778. Other support options can be found here:

<https://community.brightspace.com/support/s/contactsupport>

Interaction with Instructor Statement

The best method to reach the instructor is through email. You can send an email to robynne.lock@tamuc.edu with **PHYS 2425 in the subject line**. If you do not receive a response within 48 hours, send a reminder email.

COURSE AND UNIVERSITY PROCEDURES/POLICIES

Course Specific Procedures/Policies

1. **If you are sick, please stay home and rest. Don't spread your germs by pushing yourself to come to class. If you think you might be germly but are not sure, it would be cool if you wore a mask. Depending on your lungs, this may or may not be an okay thing for you to do. Just, you know, think about the impacts on your classmates when you make these decisions.**
2. Be compassionate, respectful, and forgiving. We are all under a lot of stress. Let's look out for each other.

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3. Keep an open line of communication with me. Talk to me if you:
 - a. Need help with *anything*.
 - b. Are having trouble keeping up with the work or getting your work in on time. I can make reasonable accommodations.
 - c. Want an extra challenge.
 - d. Are having problems with your group.
 - e. Haven't spoken with me for over a week.
 - f. Are having problems with technology or internet access.
4. ASK FOR HELP
5. Be honest. Don't plagiarize. Don't try to find answers on sites like Chegg. Do your own work. For in-class assignments, you can work together, but that doesn't mean copying each other's work.
6. Cell phone use is only allowed if used for class activities.
7. **Eating is not allowed.** However, covered drinks are allowed.
8. **No ear buds unless you have a really good reason.** It makes it hard for group cohesion to form if you seem like you are not listening to your group.
9. Attendance will be verified by seating chart at the beginning of class.
10. The instructor must be notified by email (robynne.lock@tamuc.edu) about any excused absences **no later than 24 hours after the missed class**. Even if you choose to notify the instructor in person, you **must still follow up with email** within 24 hours of the missed class.
11. You are responsible for obtaining notes and class announcements from missed classes.
12. If you cannot come to class, **call in or get in chat** with your group to participate in class activities if at all possible.
13. Excessive absences may result in being dropped from the course.
14. **When emailing the instructor, include the course number in the subject line.**
15. You are expected to check your email and D2L at least once a day for class announcements. Emails will be sent to the email addresses you provided to MyLeo.
16. Students should fully participate in class activities.
17. Students are expected to be professional and respectful and take responsibility for their learning. If you find yourself struggling, the instructors are available to provide extra help outside of class.
18. **Try to be okay with frustration. If you're frustrated, that means you're learning. You can take a break. You can talk to classmates or instructors. You can sleep on it.**

Syllabus Change Policy

The syllabus is a guide. Circumstances and events, such as student progress, may make it necessary for the instructor to modify the syllabus during the semester. Any changes made to the syllabus will be announced in advance.

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University Specific Procedures

Student Conduct

All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. The Code of Student Conduct is described in detail in the [Student Guidebook](#).

<http://www.tamuc.edu/Admissions/oneStopShop/undergraduateAdmissions/studentGuidebook.aspx>

Students should also consult the Rules of Netiquette for more information regarding how to interact with students in an online forum:

<https://www.britannica.com/topic/netiquette>

ETAMU Attendance

For more information about the attendance policy please visit the [Attendance](#) webpage and [Procedure 13.99.99.R0.01](#).

<http://www.tamuc.edu/admissions/registrar/generalInformation/attendance.aspx>

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/academic/13.99.99.R0.01.pdf>

Academic Integrity

Students at East Texas A&M University are expected to maintain high standards of integrity and honesty in all of their scholastic work. For more details and the definition of academic dishonesty see the following procedures:

[Undergraduate Academic Dishonesty 13.99.99.R0.03](#)

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/undergraduates/13.99.99.R0.03UndergraduateAcademicDishonesty.pdf>

[Graduate Student Academic Dishonesty 13.99.99.R0.10](#)

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/graduate/13.99.99.R0.10GraduateStudentAcademicDishonesty.pdf>

Plagiarism

Plagiarism is a criminal activity. You must cite all sources of information. Unreferenced copying of material, whether parts of sentences, whole sentences, paragraphs, or entire articles can result in a score of zero for your assignment and may result in further disciplinary action. This includes self-plagiarism. Do not reuse work from another course.

AI use policy

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East Texas A&M University acknowledges that there are legitimate uses of Artificial Intelligence, ChatBots, or other software that has the capacity to generate text, or suggest replacements for text beyond individual words, as determined by the instructor of the course. Any use of such software must be documented. Any undocumented use of such software constitutes an instance of academic dishonesty (plagiarism). Individual instructors may disallow entirely the use of such software for individual assignments or for the entire course. Students should be aware of such requirements and follow their instructors' guidelines. If no instructions are provided the student should assume that the use of such software is disallowed. In any case, students are fully responsible for the content of any assignment they submit, regardless of whether they used an AI, in any way. This specifically includes cases in which the AI plagiarized another text or misrepresented sources.

13.99.99.R0.03 Undergraduate Academic Dishonesty

13.99.99.R0.10 Graduate Student Academic Dishonesty

Students with Disabilities-- ADA Statement

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact:

Office of Student Disability Resources and Services

East Texas A&M University

Waters Library- Room 162

Phone (903) 886-5150 or (903) 886-5835

Fax (903) 468-8148

Email: studentdisabilityservices@tamuc.edu

Website: [Office of Student Disability Resources and Services](http://www.tamuc.edu/campusLife/campusServices/studentDisabilityResourcesAndServices/)

<http://www.tamuc.edu/campusLife/campusServices/studentDisabilityResourcesAndServices/>

Nondiscrimination Notice

East Texas A&M University will comply in the classroom, and in online courses, with all federal and state laws prohibiting discrimination and related retaliation on the basis of race, color, religion, sex, national origin, disability, age, genetic information or veteran status. Further, an environment free from discrimination on the basis of sexual orientation, gender identity, or gender expression will be maintained.

Campus Concealed Carry Statement

Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in East Texas A&M University buildings only by persons who have

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been issued and are in possession of a Texas License to Carry a Handgun. Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and ETAMU Rule 34.06.02.R1, license holders may not carry a concealed handgun in restricted locations.

For a list of locations, please refer to the [Carrying Concealed Handguns On Campus](#) document and/or consult your event organizer.

Web url:

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/34SafetyOfEmployeesAndStudents/34.06.02.R1.pdf>

Pursuant to PC 46.035, the open carrying of handguns is prohibited on all ETAMU campuses. Report violations to the University Police Department at 903-886-5868 or 9-1-1.

ETAMU Supports Students' Mental Health

The Counseling Center at ETAMU, located in the Halladay Building, Room 203, offers counseling services, educational programming, and connection to community resources for students. Students have 24/7 access to the Counseling Center's crisis assessment services by calling 903-886-5145. For more information regarding Counseling Center events and confidential services, please visit www.tamuc.edu/counsel

Resources for Students

Life is hard. I understand that you have a life beyond this class. I am here to support you as best I can, but there are many offices on campus that can help you. I put this list together myself after helping previous students through some tough times. I wanted to make it easier for you to find what you need. I hope you find it helpful.

Title IX: Sexual harassment and assault

If you have experienced or are aware of sexual harassment, sexual misconduct, domestic violence, dating violence, or stalking, you can report this to the Title IX office.

TitleIX@tamuc.edu

McDowell Administration (BA) Building 259
903-468-3104

Title IX makes it clear that violence and harassment based on sex and gender are Civil Rights offenses subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories such as race, national origin, etc. If you or someone you know has been harassed or assaulted, you can find the additional resources here:

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Crisis center of NorthEast Texas: <http://www.ccnex.org>
Know your IX: <http://knowyourix.org>
End rape on campus: <http://endrapeoncampus.org>
Clery Center for Security on Campus: <http://clerycenter.org>
Not Alone: <https://www.notalone.gov>

Concerns and incident reporting

If you have experienced <https://www.tamuc.edu/office-of-student-rights-and-responsibilities/concerns-incident-reporting/>

Forms available for:

- Help a student when there is a concern for homelessness, food insecurity, or harm to self or others
- Civil rights/Title IX
- Student misconduct
- Organization misconduct
- Hazing
- Disruptive students
- Issue with grade, professor, university service, etc.

The Student Success Teams Have Moved to Waters Library Suite 231

Here you can find:

- Academic advisors
- College life coaches
- The Money Management Center
- Title III programs

Don't know where to go?

If you need help and you do not know where to go, Campus Life and Student Development can direct you to the most relevant office.

Campuslife@tamuc.edu
Halladay 201
903-886-5195

COURSE OUTLINE / CALENDAR

Classes begin Monday, 8/25.

Content schedule

The syllabus/schedule are subject to change.

Weeks 1-2 (8/25-9/7)	Momentum and impulse
Weeks 3-8 (9/8-10/19)	Dynamics
Weeks 9-10 (10/20-11/2)	Work and Energy
Weeks 11-13 (11/3-11/23)	Kinematics
Weeks 14-15 (11/24-12/5)	Rotation
Week 16 (12/8)	Finals week

Schedule is tentative and may be adjusted depending on the pace at which we cover material.

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