



## PHYS 2425.01E, University Physics I

### COURSE SYLLABUS: Spring 2024

#### INSTRUCTOR INFORMATION

**Instructor:** Blake Head

**Office Location:** STC 340

**Office Hours:** [Mon, Wed: 4:00-5:00 PM], or by appointment

**Office Phone:** 903.886.5359

**Class Time:** MWF, 12:00am - 1:50pm: STC 135

**University Email Address:** thomas.head@tamuc.edu

**Preferred Form of Communication:** Office Hours or E-mail! Or just chat with me after class.

**Communication Response Time:** I will do my best to respond to your e-mails as soon as possible, definitely within 24 hours.

#### COURSE INFORMATION

##### Materials – Textbooks, Readings, Supplementary Readings

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>

A free nontraditional textbook: 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.*

## **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**

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. Lecture will primarily delivered through EdPuzzle videos. 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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## Student Responsibilities or Tips for Success in the Course

The vast majority of class time will be spent working in groups. Students are expected to participate fully in group-work in their assigned roles. Students are expected to have completed the reading by the due date. Students are expected to take notes on all problems you solve in class, any notes shared by other groups on whiteboards. For work displayed on whiteboards, the easiest thing to do is to just take photos of the work using camera phones. All students are expected to complete the tutorial worksheets; although the in-class tutorials are not graded, you will need complete worksheets to do the tutorial homework and to revise for the exams.

## GRADING

We will be utilizing a Standards Based grading system in this course. In simple terms, your performance in this class will be assessed based on a set of standards that I'm hoping for you to achieve throughout this course. This is counter to more traditional grading systems, where each assignment is given a single numerical score. Instead, I will provide feedback on each of your assignments. Using this feedback, you will have the opportunity to revise your work and resubmit. Remember, college is a bout **learning**, so as long as you are making the effort to learn, that is what is most important.

Your grade will be almost entirely be determined by *Individual Assignments*. You are to complete these as homework assignments, and as the name implies, individually. Everything we do in class is group work, but homework is individual. I assign one of these nearly every class day, and they are due before the next class starts unless I say otherwise. You **MUST** turn your work in on time. I don't accept late work outside of extenuating circumstances! It is okay, however, if your first attempt simply says something like, "I think this has something to do with X, but I feel really lost." That will allow you to submit revisions.

On each *Individual Assignment*, you will receive 1 of 3 overall marks:

Label	What it means
Accepted	This work is completed for the most part correctly. Any errors are fairly minor. You are done!
Revise	You have attempted the work, but there are some things you need to work on learning better. You should revise your assignment.
No credit	You either submitted nothing, accidentally submitted the wrong assignment, or submitted work that is barely started.

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**You should expect most of your assignments first attempts to be marked *Revise*. 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.**

If your work comes back *Revise*, that means you have one week to revise it. You have unlimited revision attempts, but you always need to complete your next revision within 1 week of when I last sent you feedback.

- You must complete your revisions **individually** because these are how I see how much you can do on your own.
- However, you are **required to meet with an instructor** to discuss your revision and provide proof of this discussion with your submitted work. Have one of us (myself or one of the LAs) sign a note saying they talked to you about the assignment. You can upload this note with your work as an image/pdf file, or give it to me in class.
- You can meet with me during office hours or with the LAs during tutoring sessions. If your time on campus is limited, we can do this via Zoom. Time permitting, we can do some of this in class.

Each assignment comes with associated learning goals. These are where grade calculations come from, and this is where you will get more concrete feedback on how much you have learned. In your professional careers, you will get good at self evaluation and reflecting on how you are doing. We're working on this skill now, but I have learned that my customized feedback sentences can be difficult to parse. Anyway, hopefully you find these helpful.

For each learning goal/standard associated with an individual assignment, you will be given one of three marks:

Label	What it means
Satisfactory	You got this! You know how to solve this type of problem or use physics concepts to explain a physical situation with words or diagrams. If you had to do this next semester, I'm pretty sure you would be fine.
Minimum	You know how to do some parts of the problem or parts of your written explanation make sense, but you are still missing some important points.
Goals not met	Either I am having a really hard time understanding your work, you don't appear to understand something pretty fundamental to the concept or problem, or you didn't do the work.

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You might notice that Satisfactory does not show up as green in D2L, depends where you are looking. That's because D2L actually has 4 levels, and the top level *exceptional* is green, but I don't need a 4<sup>th</sup> level, so just ignore that.

These learning goals are where grade numbers will actually come from. I have built a cool spreadsheet that will help you see how this all works. This probably seems confusing. I hope the spreadsheet helps.

Satisfactory's correspond to a 3, Minimum to a 2, and Goals not met to a 1. We'll average together all of your work for a standard together, so you'll have a number for each standard, and we'll average all the standard numbers together to get an overall number that indicates what letter grade you would get. The scale goes like this:

A	2.7-3.0
B	2.4-2.7
C	2.1-2.4
D	1.8-2.1
F	0-1.8

Beyond the individual assignments are the group work and tutorials in class. You will take pictures of these and upload them to the proper location in D2L as well. Each student will need to submit their own copy, but of course your entire group can submit the same thing (after all, it IS group work).

This is also a new grading system for me! I am working closely with my colleagues here at TAMUC to make sure that your experience learning in this class is the best that it can be. I believe this system will be much better for everyone, but if you ever have questions please let me know!

## **TECHNOLOGY REQUIREMENTS**

### **LMS**

All course sections offered by Texas A&M University-Commerce 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](https://documentation.brightspace.com/EN/brightspace/requirements/all/browser_support.htm)

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Zoom Video Conferencing Tool

[https://inside.tamuc.edu/campuslife/CampusServices/CITESupportCenter/Zoom\\_Account.aspx?source=universalmenu](https://inside.tamuc.edu/campuslife/CampusServices/CITESupportCenter/Zoom_Account.aspx?source=universalmenu)

## **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](mailto: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 TAMUC 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**

## **COURSE AND UNIVERSITY PROCEDURES/POLICIES**

### **Course Specific Procedures/Policies**

#### **General Classroom**

Students are expected to be on time and present for all class meetings. If an emergency results in an absence, the student should contact the instructor as soon as possible informing the instructor of the emergency and inquiring about

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ways to make up the missed class. The instructor will make judgment on how to handle the situation. Possible reasons for excused absence are listed in the “Student’s Guidebook” under class attendance policy. Attendance and tardy records will be maintained and both may result in deductions from your overall grade. Five unexcused absences will automatically result in a failing grade.

### **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.

## **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>

### **TAMUC 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 Texas A&M University-Commerce 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](#)

[Undergraduate Student Academic Dishonesty Form](#)

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<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/documents/13.99.99.R0.03UndergraduateStudentAcademicDishonestyForm.pdf>

[Graduate Student Academic Dishonesty Form](#)

<http://www.tamuc.edu/academics/graduateschool/faculty/GraduateStudentAcademicDishonestyFormold.pdf>

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

### **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**

Texas A&M University-Commerce

Velma K. Waters Library Rm 162

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

Fax (903) 468-8148

Email: [studentdisabilityservices@tamuc.edu](mailto:studentdisabilityservices@tamuc.edu)

Website: [Office of Student Disability Resources and Services](#)

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

### **Nondiscrimination Notice**

Texas A&M University-Commerce 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 Texas A&M University-Commerce buildings only by persons who have 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

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Code (PC) 46.035 and A&M-Commerce 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 A&M-Commerce campuses. Report violations to the University Police Department at 903-886-5868 or 9-1-1.

### **A&M-Commerce Supports Students' Mental Health**

The Counseling Center at A&M-Commerce, 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](http://www.tamuc.edu/counsel)

### **AI use policy [Draft 2, May 25, 2023]**

Texas A&M University-Commerce 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

### **Department or Accrediting Agency Required Content**

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## COURSE OUTLINE / CALENDAR

Below is a tentative schedule for the material we will be covering this semester. This could change depending on pacing!!

### Content schedule

Weeks 1-2	Momentum and impulse
Weeks 3-8	Dynamics
Weeks 9-10	Work and Energy
Weeks 11-13	Kinematics
Weeks 14-15	Rotation
Week 16	Finals week

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