



## Phys 489.02E: Classical Mechanics

COURSE SYLLABUS: FALL 2025

### INSTRUCTOR INFORMATION

Instructor: Dr. Blake Head

Office Location: Room 340, McFarland Science Building

Office Hours: TBA

University Email Address: [Thomas.Head@etamu.edu](mailto:Thomas.Head@etamu.edu)

Preferred Form of Communication: **office hours or email**

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

##### Recommended Text

*Analytical Mechanics 7th ed, by Fowles & Cassidy (it can be found online).*

##### Required Software

Zoom

Web browser with access to WTClass, PHYS 3330 TPC Mechanics 1

### Course Description

*Hours: 3*

*A mathematical treatment of the fundamentals of classical mechanics. Topics include particle dynamics in one, two and three dimensions; conservation laws; dynamics of a system of particles; motion of rigid bodies; central force problems; accelerating coordinate systems; gravitation; Lagrange's equations and Hamilton's equations. Prerequisites: PHYS 2426, and concurrent enrollment in MATH 2415 or MATH 2320 or consent of instructor.*

### COURSE REQUIREMENTS

When you registered for this course, you agreed to take this course through the Texas Physics Consortium. Details about the Consortium are found here:

<https://www.tarleton.edu/tpc/>. The syllabus posted on WTClass, the West Texas A&M

*The syllabus/schedule are subject to change.*

University's Learning Management System, is appended to the end of this document. That syllabus is the official syllabus for this course and lists all details, course requirements, etc. The instructor listed on that syllabus should be your official contact for this course; the listed ETAMU instructor is simply the local coordinator responsible for monitoring your progress and recording the final grade.

The grade you earn that is visible in WTCClass is your official grade for this course; the ETAMU instructor cannot alter the WTCClass grade.

## **TECHNOLOGY REQUIREMENTS**

### **D2L (a.k.a. Brightspace, MyLEO Online, LMS)**

All course sections offered by East Texas A&M University have a corresponding course shell in the myLEO Online Learning Management System (LMS). The link below gives technical requirements for accessing the LMS

LMS Browser Support:

<https://community.d2l.com/brightspace/kb/articles/5663-browser-support>

## **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@etamu.edu](mailto:helpdesk@etamu.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>

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## **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.

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

### **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](#):

<https://www.etamu.edu/student-guidebook/>

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>

### **Mental Health and Counseling**

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.etamu.edu/counseling-center](http://www.etamu.edu/counseling-center)

### **ETAMU Attendance**

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

<https://inside.etamu.edu/admissions/registrar/generalInformation/attendance.aspx>

### **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](#)

<https://inside.etamu.edu/aboutus/policiesproceduresstandardsstatements/rulesProcedures/13students/undergraduates/13.99.99.R0.03.pdf>

### **Artificial Intelligence**

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.

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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 Services**

East Texas A&M University

Velma K. Waters Library 162

Phone (903) 886-5150

Fax (903) 468-8148

Email: [StudentDisabilityServices@etamu.edu](mailto:StudentDisabilityServices@etamu.edu)

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

<https://www.etamu.edu/student-disability-services/>

### **Nondiscrimination Notice**

East Texas A&M University will comply in the classroom, and in online courses, with all federal and state laws prohibiting discrimination, sexual harassment, and retaliation against any individual on the basis of race, color, religion, sex, national origin, age, disability, genetic information, veteran status, sexual orientation, gender identity, or any other legally prohibited basis. Such discrimination, harassment, and retaliation are violations of A&M System policy and will not be tolerated. Further, an environment free from discrimination on the basis of sexual orientation, gender identity, or gender expression will be maintained.

### **Campus Concealed Carry Statement**

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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 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:

<https://inside.etamu.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.

### **Sexual Harassment and Violence**

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 is a victim of harassment, stalking, domestic violence, sexual assault, or related crimes, has been harassed or assaulted, here are some resources for you:

#### **24/7 Resources**

- National Domestic Awareness Hotline: 1-800-799-SAFE (7223)
- National Sexual Assault Hotline: 1-800-656-4673
- National Suicide Prevention Lifeline: 988

#### **Campus Resources**

- **Call 911 in emergency situations**
- If you or someone you know has been impacted and needs support, email: [CARE@etamu.edu](mailto:CARE@etamu.edu) (monitored Monday-Friday, 8am-5pm)
- Victim Advocacy and Support: <https://www.etamu.edu/student-advocacy-support/victim-support-services/>
- How to Help and Report: <https://www.etamu.edu/student-advocacy-support/victim-support-services/>
- How to Report Concerns About a Fellow Student: [https://cm.maxient.com/reportingform.php?TAMUCommerce&layout\\_id=20](https://cm.maxient.com/reportingform.php?TAMUCommerce&layout_id=20)
- University Title IX Compliance Office: <https://www.etamu.edu/titleix/>
- University Title IX Contact: Amanda Berry, 903-886-5991, [TitleIX@etamu.edu](mailto:TitleIX@etamu.edu)

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- University Police Department Sexual Assault pages: <https://www.etamu.edu/university-police-department/crime-prevention/>
- University Counseling Center: <https://www.etamu.edu/counseling-center/>
- Campus police email: [upd@etamu.edu](mailto:upd@etamu.edu)

**External resources:**

Crisis center of Northeast Texas: <http://www.cnetx.org>

Know your IX: <https://www.advocatesforyouth.org/campaigns/know-your-ix/>

End rape on campus: <https://endrapeoncampus.org/>

Clery Center for Security on Campus: <https://clerycenter.org/>

National Sexual Assault Online Hotline: <https://hotline.rainn.org/online>

**Contact Information and Office Hours –**

**Instructor:** Dr. Keshav Shrestha  
**Email:** [kshrestha@wtamu.edu](mailto:kshrestha@wtamu.edu)  
**Office:** NSB 114G  
**Office Phone:** 806-651-2545  
**Office Hours:** By appointment only, to be held via Zoom.

**Texts and Other Materials**

- Textbook (**Recommended**): *Analytical Mechanics 7<sup>th</sup> ed, by Fowles & Cassidy (it can be found online).*
- Other requirements: Access to zoom.

**Course Description:** This course is designed to introduce students to more advanced concepts in classical mechanics. We will cover topics such as coordinate systems, Newton's laws, oscillations, gravity and central forces, rigid body motion, and Lagrangian mechanics.

**Attendance:** Students are required to attend a weekly Zoom meeting on Mondays at 10:00 am (the link will be provided on Canvas). The Wednesday and Friday classes will be recorded and posted on Canvas.

**Evaluation:**

- Homework: 20%
- Exam 1: 20%
- Exam 2: 20%
- Final: 40%

**Exam dates & Timings:**

- Exam 1: TBD
- Exam 2: TBD
- Final: TBD

**The final grade for the course will be based on:**

- $A \geq 90\%$
- $B \geq 80\% - < 90\%$
- $C \geq 70\% - < 80\%$
- $D \geq 50\% - < 70\%$
- $F < 50\%$

**Explanation of Assignments and Requirements:** Homework assignments are typically keyed to problems in your text. All submitted homework is to be as neat as possible (readable) and structured as follows:

**Top of Page:** Your name, date, and Course ID

**Body of Page:**

- Problem ID
- A concise narrative when appropriate.

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MWF 10:00 – 10:50 am (online)

- Equations used (with symbols and values).
- Draw border(s) around the final answer(s) of a problem.
- Multiple problems can be listed on a given page.

Late work will not be accepted unless there are written documents extenuating circumstances. Any exceptions to the late work policy will be decided on a case-by-case basis by Dr. Shrestha.

### Communication:

You can contact me via email ([kshrestha@wtamu.edu](mailto:kshrestha@wtamu.edu)), phone (806-651-2545), or in-person (office NSB 114G).

### Attendance Policy:

Attend classes! Notify me via email ([kshrestha@wtamu.edu](mailto:kshrestha@wtamu.edu)) prior to a class that you must miss.

### Cell Phones:

In general, turn your cell phones off during classes. Notify me if you must be available, via cell phone, during class (e.g. for first responders, daycare, etc.).

### Academic Integrity –

For more information, see the Code of Student Life. All work must be completed individually unless otherwise stated. Commission of any of the following acts shall constitute scholastic dishonesty: acquiring or providing information for any assigned work or examination from any unauthorized source; informing any person or persons of the contents of any examination prior to the time the exam is given in any subsequent sections of the course or as a makeup; plagiarism; submission of a paper or project that is substantially the same for two courses unless expressly authorized by the instructor to do so. For more information, see the [Student Handbook](#)<sup>1</sup>.

### Generative AI –

Generative artificial intelligence (Generative AI) is a computer-based technology that produces a variety of data, such as pictures, videos, music, or words, which may look or sound like a person made them. Generative AI tools appear to be created by humans because they are derived from deep machine learning routines and large language models based on algorithmic comprehension of materials created by humans. West Texas A&M University recognizes that generative AI presents challenges and simultaneously offers stimulating opportunities in higher education. West Texas A&M University offers faculty members the following choice of three distinct approaches to this complex challenge:

**No Use of Generative AI Permitted**—Because writing and critical thinking skills are part of the learning outcomes of this course, it is a violation of academic integrity to employ generative AI at any point in this course.

### Acceptable Student Behavior –

Classroom behavior should not interfere with the instructor's ability to conduct the class or the ability of other students to learn from the instructional program ([Student Handbook](#)). Unacceptable or disruptive behavior will not be tolerated. Students engaging in unacceptable behavior may be

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instructed to leave the classroom. Inappropriate behavior may result in disciplinary action or referral to the University's Behavioral Intervention Team. This prohibition applies to all instructional forums, including electronic, classroom, labs, discussion groups, field trips, etc.

### ADA Statement –

West Texas A&M University seeks to provide reasonable accommodations for all qualified persons with disabilities. This University will adhere to all applicable federal, state and local laws, regulations and guidelines with respect to providing reasonable accommodations as required to afford equal educational opportunity. It is the student's responsibility to register with the Office of Student Accessibility<sup>ii</sup> and to contact faculty members in a timely fashion to arrange for suitable accommodations. Contact Information: Student Success Center, CC 106; phone (806) 651-2335.

### Mental Health and Well-Being –

The university aims to provide students with essential knowledge and tools to understand and support mental health. As part of our commitment to your well-being, we offer access to Telus Health, a service available 24/7/365 via chat, phone, or webinar. Scan the QR code to download the app and explore the resources available to you for guidance and support whenever you need it.



### Title IX Statement –

West Texas A&M University is committed to providing a learning, working and living environment that promotes personal integrity, civility, and mutual respect in an environment free of sexual misconduct and discrimination. 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. Harassment is not acceptable. If you or someone you know has been harassed or assaulted, you can find the appropriate resources here:

- WTAMU Civil Rights and Title IX Coordinator – VHAC 262, **or** call 806.651.3199
- WTAMU Counseling Services – VHAC 242, **or** call 806.651.2340
- WTAMU Police Department – 806.651.2300, **or** dial 911
- 24-hour Crisis Hotline – 800.273.8255, **or** 806.359.6699, **or** 800.692.4039
- For more information, see the [Student Handbook](#)<sup>iii</sup>.

### Evacuation Statement –

If you receive notice to evacuate the building, please evacuate promptly but in an orderly manner. Evacuation routes are posted in various locations indicating all exits, outside assembly area, location of fire extinguishers, fire alarm pull stations and emergency telephone numbers (806-651-2300 or 911). information: an evacuation is necessary: evacuate immediately do not use elevators; take all personal belongings with you; report to outside assembly area and wait for further

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information; students needing assistance in the evacuation process should bring this to the attention of the instructor at the beginning of the semester.

### WT Attendance Policy for Core Curriculum Classes

For the purposes of learning assessment and strategic planning, all students enrolled in Core Curriculum courses at West Texas A&M University must swipe their Buff Gold cards through the card reader installed in the classroom/lab for each class/lab meeting.

### Chemical and Equipment Safety Statement

Safety is everyone's responsibility. Material Safety Data Sheets (MSDSs) are provided for all chemicals used in this class. MSDSs provide information about physical properties, health risks, fire explosion data, and other important information associated with these chemicals. Before handling or using a chemical, you should refer to the MSDS for that chemical. It is your responsibility to inform the instructor in writing of any health conditions that may prevent you from safely using a chemical (pregnancy, auto immune deficiency, etc.). It is also the responsibility of the student to report any spill or problems found while storing or using a chemical. If you are unsure about a chemical, always ask. If you see any unsafe condition, notify your instructor immediately. If you are unsure about the proper and safe operation of any piece of equipment, ask your instructor for proper instruction. All injuries, spill of materials and unsafe conditions must be reported to the instructor immediately.

Any pregnant students, or students planning to become pregnant, should consult their health care provider to determine what, if any, additional precautions are needed based on their individual situation. It is the responsibility of the student to communicate their needs to the Vice President for Student Affairs as soon as possible in order for risk-reduction to begin when it can be most effective, and to determine if additional modifications are necessary. While the university cannot mandate that the student notify that she is pregnant or is planning to become pregnant, the university strongly recommends that students provide notification so appropriate steps can be taken to ensure the health of both parent and child. To communicate health circumstances or to request additional information, please contact the Vice President for Student Affairs.

### Tentative Topics:

- Fundamental Concepts: Vectors
- Newtonian Mechanics: Rectilinear Motion of a Particle
- Oscillations
- General Motion of a Particle in Three Dimensions
- Noninertial Reference Systems
- Gravitation and Central Forces
- Dynamics of Systems of Particles
- Mechanics of Rigid Bodies: Planar Motion
- Lagrangian Mechanics

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<sup>i</sup> <https://www.wtamu.edu/student-life/handbook/index.html>

<sup>ii</sup> <https://www.wtamu.edu/student-support/student-accessibility/index.html>

<sup>iii</sup> <https://www.wtamu.edu/student-life/handbook/index.html>