

**The University of Texas at El Paso
Department of Physics**

COURSE INFORMATION

PHYS 3352: Analytical Mechanics II, CRN: 21282 Spring 2025
Delivery Method: In-person
Meeting Day and Time: MW 1:30 – 2:50 pm
Location: UGLC 340

INSTRUCTOR INFORMATION

Tunna Baruah, Professor
Written Communication: tbaruah@utep.edu
Phone Number: (915) 747-7529
Office Location: Physical Science, Room 120
Office Hours: MW 10:00 – 11:00 am or through appointment

COURSE DESCRIPTION

This course introduces the students to Lagrangian and Hamiltonian dynamics and their applications to various dynamical systems. The topics to be discussed are Lagrangian and Hamiltonian dynamics, central force motion, dynamics of a system of particles, non-inertial reference frame, dynamics of rigid bodies, and coupled oscillations.

COURSE OBJECTIVES

The objective is that students will be able analyze the behavior of complex dynamical systems. Chapters from 7 to 12 from the required textbook will be covered. The students will be required to solve textbook problems using the techniques they learn in the course. The assessment will be based on regular quizzes, homework, and tests.

REQUIRED TEXTBOOK

Classical Dynamics of particles and systems, by Thornton and Marion, 5th edition
ISBN-13: 978-0534408961
ISBN-10: 0534408966
eBook: <https://faculty.cengage.com/works/9780534408961>

COURSE ASSIGNMENTS AND GRADING

The students will be required to solve textbook problems using the techniques they learn during the course. The assessment will be made based on quizzes, homework, and tests. The grades will be determined from three tests including the final (60%), quiz(20%), and homework (20%). Quizzes will be based on class work and home-works.

TECHNOLOGY REQUIREMENTS

Some course content and assignments are delivered via the Internet through the Blackboard learning management system. Ensure your UTEP e-mail account is working and that you have access to the Web and a stable web browser. Google Chrome and Mozilla Firefox are the best

browsers for Blackboard; other browsers may cause complications. When having technical difficulties, update your browser, clear your cache, or try switching to another browser. You will need to have access to a computer/laptop. You will need to download or update the following software: Microsoft Office & Adobe Acrobat Reader. If you do not have word-processing software, you can download Word and other Microsoft Office programs (including Excel, PowerPoint, Outlook and more) for free via UTEP's Microsoft Office Portal.

IMPORTANT: If you encounter technical difficulties beyond your scope of troubleshooting, please contact the UTEP Help Desk as they are trained specifically in assisting with technological needs of students. Please do not contact me for this type of assistance. The Help Desk is much better equipped than I am to assist you!

Course Communication: Face to face communication is best. If that does not work, then use email. When e-mailing me, be sure to email from your UTEP student account and please put the course number in the subject line. In the body of your e-mail, clearly state your question. At the end of your e-mail, be sure to put your first and last name.

Announcements: Check the Blackboard announcements frequently for any updates, deadlines, or other important messages.

ATTENDANCE AND PARTICIPATION

Our class meetings are in-person at UGLC Rm 340, every Monday and Wednesday from 1:30 am to 2:50 pm.. Your participation in the course is important not only for your learning and success but also to create a community of learners. Participation is determined by the completion of the following activities:

- Attending classes
- Reading/Viewing all course materials to ensure understanding of assignment requirements.
- Completing assignments.

Because these activities are designed to contribute to your learning each week, they cannot be made up after their due date has passed.

EXCUSED ABSENCES AND/OR COURSE DROP POLICY

I will not drop you from the course. However, if you feel that you are unable to complete the course successfully, please let me know and then contact the Registrar's Office to initiate the drop process. If you do not, you are at risk of receiving an "F" for the course.

DEADLINES, LATE WORK, AND ABSENCE POLICY

Complete the assignments by the deadline given on Blackboard.

MAKE-UP TESTS/QUIZZES

Make-up work will be given only in the case of a documented emergency. Note that make-up work may be in a different format than the original work, may require more intensive preparation, and may be graded with penalty points. If you miss an assignment and the reason is not considered excusable, you will receive a zero. It is therefore important to reach out to me—in advance if at all possible—and explain with proper documentation why you missed a given course requirement. Once a deadline has been established for make-up work, no further extensions or exceptions will be granted.

INCOMPLETE GRADE POLICY

Incomplete grades may be requested only in exceptional circumstances after you have completed at least half of the course requirements. Talk to me immediately if you believe an incomplete is warranted. If granted, we will establish a contract of work to be completed with deadlines.

ACCOMMODATIONS POLICY

The University is committed to providing reasonable accommodations to students with documented disabilities. Students who become pregnant may also request reasonable accommodations, in accordance with state and federal laws and regulations and University policy. Accommodations that constitute undue hardship are not reasonable. To make a request, please register with the UTEP Center for Accommodations and Support Services (CASS). Contact CASS at 915-747-5148, email them at cass@utep.edu, or apply for accommodations online via the CASS portal.

SCHOLASTIC INTEGRITY

Academic dishonesty is prohibited and is considered a violation of the UTEP Handbook of Operating Procedures. It includes, but is not limited to, cheating, plagiarism, and collusion. Cheating may involve copying from or providing information to another student, possessing unauthorized materials during a test, or falsifying research data on laboratory reports. Plagiarism occurs when someone intentionally or knowingly represents the words or ideas of another as ones' own. Collusion involves collaborating with another person to commit any academically dishonest act. Any act of academic dishonesty attempted by a UTEP student is unacceptable and will not be tolerated. All suspected violations of academic integrity at The University of Texas at El Paso must be reported to the Office of Student Conduct and Conflict Resolution (OSCCR) for possible disciplinary action. To learn more, please visit HOOP: Student Conduct and Discipline.

GUIDANCE ON ARTIFICIAL INTELLIGENCE

Use of AI technologies or automated tools, particularly generative AI such as ChatGPT or DALL-E, is not allowed for assignments in this class. Each student is expected to use critical and creative thinking skills to complete tasks and not rely on computer-generated ideas. Any direct use of AI-generated materials submitted as your own work will be treated as plagiarism and reported to the Office of Student Conduct and Conflict Resolution (OSCCR).

SCHEDULE:

Test dates (tentative):

Midterm I: Feb. 17

Midterm II: Mar. 17

Final: According to UTEP Final Schedule.