



Class Reference Number (CRN): 33545

Instructor: Methaq S. Abed, Ph.D., P.E.

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Text Book: Mechanics Dynamics by R. C. Hibbeler, 14th edition.

Office: Engineering Building, A104.

Office Hours: Virtual office hours will be offered by appointment. You are welcome anytime to send your questions via email and allow 48 hrs. to reply.

Class Meeting Schedule: 9:30 -10:35 am online

Class Duration: June 8th, 2020 - July 31st, 2020

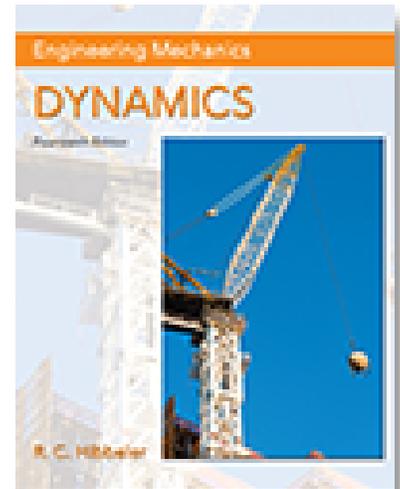
Course Description:

This three-credit-hour class is intended to provide the students with an introduction to the theories of kinematics and kinetics for a particle and system of particles, perform dynamics analysis for rigid bodies under planar motion. This course satisfies the fundamental dynamics components of the general engineering program. No software required for this class.

Course Objective:

At the end of this class, the typical students should be well prepared in the following areas:

- Determine the kinematic quantities (position, displacement, velocity, and acceleration) of a particle traveling along straight and curved paths.
- Apply the equation of motion using the rectangular coordinates, or the normal and tangential coordinates.
- Apply the principle of work and energy to a particle or system of particles.
- Calculate the linear momentum of a particle and the linear impulse of a force.
- Determine the mass moment of inertia of a rigid body or a system of rigid bodies.
- Apply the three equations of motion for a rigid body in planar motion.
- Analyze the planar kinetics of a rigid body undergoing rotational motion.
- Analyze the planar kinetics of a rigid body undergoing general plane motion.
- Define the various ways a force and couple do work.
- Apply the principle of work and energy to a rigid body.
- Determine the potential energy of conservative forces.





Topics covered

1. Kinematics of a Particle (Chapter 12)
2. Kinematics of a Particle: Force and Acceleration (Chapter 13)
3. Kinematics of a Particle: Work and Energy (Chapter 14)
4. Kinematics of a Particle: Impulse and Momentum (Chapter 15)
5. Planar Kinematics of a Rigid Body (Chapter 16)
6. Planar Kinematics of a Rigid Body: Force and Acceleration (Chapter 17)
7. Planar Kinematics of a Rigid Body: Work and Energy (Chapter 18)

GRADING PLAN

The final grade for the course will be calculated based on the breakdown given below:

- Exams 60%
- Homework through mastering engineering 20%
- Quizzes through mastering engineering 10 %
- Participation through Yuja /video quiz/discussion board through Blackboard 10%

There will be four exams. ***No makeup exam will be given under any circumstances. If you miss two exams, the instructor has the right to drop you or assign you an "F" grade for the class. The exams' grade will be calculated based on the average of the three highest tests 'grade. It means that the lowest test grade will be dropped. If a student misses one test for technology issues (such as internet issues), that would be his/her lowest test to be dropped.***

Homework:

All students are required to register for the course through mastering engineering during the first week of class. If a student fails to register to mastering engineering after one week of starting the class, the instructor has the right to drop him from class.

<http://www.pearsonmylabandmastering.com/northamerica/masteringengineering/students/get-registered/index.html>

Course ID: MEABED3895106

Late homework will be penalized by a 50% deduction per day after the deadline. You have six trials to submit the correct answer.



If you have any technical issues with registering or submitting your answers, please check with the mastering engineering technical support, you can find it in the link below:

<https://www.pearsonmylabandmastering.com/northamerica/masteringengineering/students/support/index.html>

Quizzes: All quizzes will be given through mastering engineering; the duration of the quiz would be 30 minutes. Usually, the quiz will be available for 12 hours, and the student can take it at his/her convenience. No makeup quizzes will be given under any circumstances. If you miss only one quiz, the next quiz will be doubled.

Participation: The students are expected to log in to the Blackboard at least two times a week. To ensure that the students were getting the materials posted in the Blackboard, you are required to take the Yuja quiz, or respond to a discussion board depends on the activity for that week.

Drop/Withdrawal Deadline: July 10th, 2020.

Grading Scale

Your final grade will be calculated based on the points you have accumulated as follows:

- A ≥ 88
- B ≥ 78 but < 88
- C ≥ 68 but < 78
- D ≥ 58 but < 68
- F < 58

Late Work Policy

Homework assignments will be due on Sundays at 11:59 pm. Late homework will be penalized by a 50% deduction per day after the deadline. All other types of assignments, no late work will be accepted.

Attendance Policy

Since this is an online class, attendance is determined by class participation online. Students must be prepared, participate in online individual/group discussions, and complete the course modules to understand and incorporate the rhetorical strategies and processes used to complete the projects/ or assignments. Participation is worth 10 percent of the final grade.



Technology Requirements

Course content is delivered via the Internet through the Blackboard learning management system (LMS). Ensure your UTEP email account is working and that you have access to the Web. You may use any of the primary Web browsers—Explorer, Google Chrome, Firefox, Safari, etc. When having technical difficulties, try switching to another browser.

You will need to have or have access to a computer/laptop, printer, scanner, a webcam, and a microphone. You will need to purchase a USB (flash drive). You will need to download or update the following software: Microsoft Office, Adobe, Flashplayer, Windows Media Player, QuickTime, and Java. Check that your computer hardware and software are up-to-date and able to access all parts of the course. If you encounter technical difficulties of any kind, contact the Help Desk.

Netiquette

- o Always consider audience. Remember that members of the class and the instructor will be reading any postings.
- o Respect and courtesy must be provided to classmates and to the instructor at all times. No harassment or inappropriate postings will be tolerated.
- o When reacting to someone else's message, address the ideas, not the person. Post only what anyone would comfortably state in a F2F situation.
- o Blackboard is not a public internet venue; all postings to it should be considered private and confidential. Whatever is posted on in these online spaces is intended for classmates and professors only. Please do not copy documents and paste them to a publicly accessible website, blog, or other space. If students wish to do so, they have the ethical obligation to first request the permission of the writer(s).

Drop Policy

To drop this class, please contact the [Registrar's Office](#) to initiate the drop process. If you cannot complete this course for whatever reason, please contact me. If you do not, you are at risk of receiving an "F" for the course.

Accommodations Policy

The University is committed to providing reasonable accommodations and auxiliary services to students, staff, faculty, job applicants, applicants for admissions, and other beneficiaries of University programs, services and activities with documented disabilities in order to provide them with equal opportunities to participate in programs, services, and activities in compliance with sections 503 and 504 of the Rehabilitation Act of 1973, as amended, and the Americans with Disabilities Act (ADA) of 1990 and the Americans with Disabilities Act Amendments Act (ADAAA) of 2008. Reasonable accommodations will be made unless it is determined that doing



so would cause undue hardship on the University. Students requesting an accommodation based on a disability must register with the [UTEP Center for Accommodations and Support Services](#).

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 [HOOP: Student Conduct and Discipline](#).

Student Resources

UTEP provides a variety of student services and support:

- [UTEP Library](#): Access a wide range of resources including online, full-text access to thousands of journals and eBooks plus reference service and librarian assistance for enrolled students.
- [Help Desk](#): Students experiencing technological challenges (email, Blackboard, software, etc.) can submit a ticket to the UTEP Helpdesk for assistance. Contact the Helpdesk via phone, email, chat, website, or in person if on campus.
- [University Writing Center \(UWC\)](#): Submit papers here for assistance with writing style and formatting, ask a tutor for help and explore other writing resources.
- [Math Tutoring Center \(MaRCS\)](#): Ask a tutor for help and explore other available math resources.
- [History Tutoring Center \(HTC\)](#): Receive assistance with writing history papers, get help from a tutor and explore other history resources.
- [Military Student Success Center](#): UTEP welcomes military-affiliated students to its degree programs, and the Military Student Success Center and its dedicated staff (many of whom are veterans and students themselves) are here to help personnel in any branch of service to reach their educational goals.
- [RefWorks](#): A bibliographic citation tool; check out the RefWorks tutorial and Fact Sheet and Quick-Start Guide.

ACES & Tutoring Center

Please note there are tutoring services available in the ACES center. Tutoring is free to you; the Department pays them. If tutors are not used, the Department may stop funding them. Check the schedule of the tutors and make use of the services. For more details, visit the



ME Advising Blackboard -> cc mech acadav: MECH Academic Advising -> Tutoring & Resources

At the link, you can find tutor schedules, location of the ACES center, and the list of tutors available. For more information, send email to METutors@utep.edu

Course Modules

MODULE	OBJECTIVES	ACTIVITIES	ASSESSMENTS	CONSTRAINTS
Week -1	-Syllabus & course overview -Introduction -Rectilinear Motion	-Discussion Board Introduction: Introduce yourself with a small bio with a small photo recommended. - Read: Chapter 12, Sec.'s (1,2, &3) OR lectures 1-2 (power point slides on BB). -Watch videos for week 1	-Syllabus Quiz -Discussion board -H.W.#1 through mastering engineering.	- Due date for Syllabus quiz: Sunday, June 14 th at 11:59 pm. - Due date for discussion board by a minimum of 1 post: Sunday at 11:59 pm. -H.W.#1 due on Sunday, June 14 th , at 11:59 pm.
Week -2	-Curvilinear Motion (Rectangular Components) -Projectile -Absolute Dependent Motion Analysis of Two Particles	- Read: Chapter -12- Sec.'s(4, 5, 6, &9) Or Lectures 3,4,&5 (power point slides on BB). -Watch videos for week 2	- Quiz # 1 -Exam#1 -H.W.#2 All the above assessments through mastering engineering. Yuja/Video Quiz, for participation	- Quiz #1 on Tuesday, June 16 th , for 30 min. -Exam #1 on Thursday, June 18th - H.W.#2 due on Sunday, June 21 st , at 11:59 pm. -Yuja Quiz due on Sunday at 11:59 pm.
Week -3	-Curvilinear Motion ((Normal and Tangential Components)	- Read: Chapter -12- Sec.'s (7&10)	-Quiz #2 - H.W.#3	-Quiz #2 on Thursday, June 25 rd , for 30 min. -H.W.#3 due on Sunday, June 28 th , at 11:59 pm.



	- Equations of Motion	-Chapter 13 (Sec. 1-3, &4) Or Lectures 6,7,9,10, power point slides on BB. -Watch videos for week 3	-Yuja/Video Quiz, for participation	through mastering engineering. -Yuja Quiz due on Sunday at 11:59 pm
Week - 4	- Equations of Motion for Normal and Tangential Coordinates -Principal of Work and Energy -Power	- Read: Chapter-13(Sec.5) - Chapter 14 (Sec. 1,2,3,&4) Or Lectures 11, 12,13 (power point slides on BB) -Watch videos for week 4	- Exam #2 - H.W.#4 - Yuja /Video Quiz, for participation	- Exam #2 on Thursday, July 2nd -H.W.#4 due on Sunday, July 5 th , at 11:59 pm through mastering engineering. -Yuja Quiz due on Sunday at 11:59 pm
Week - 5	Conservation of Energy -Principal of Linear Impulse and momentum Conservation of Linear Momentum	- Read: Chapter-14-(Sec.5) -Chapter 15, Sec.'s(1,2,&3) Or -Lectures 14,15,16 (power point slides on BB) -	- Quiz #3 -H.W.#5 -Yuja/Video Quiz, for participation	-Quiz #3, Thursday, July 9 th for 30 min. -H.W.#5 due date: Sunday, July 12 th at 11:59 pm through mastering engineering. -Yuja Quiz due on Sunday at 11:59 pm. Blackboard Collabor. Ultra, meeting time from 1:00 to 2:00 pm.
Week - 6	-Principal of Angular Impulse and Momentum -Planar Rigid Body Motion	- Read: Chapter-15, Sec.'s (5&6) -Chapter-16, Sec.'s (1-3) -Chapter-17, Sec. (1)	- Exam #3 - Yuja/Video Quiz	Exam #3 on Thursday, July 16th -Yuja Quiz due on Sunday at 11:59 pm



	-Moment of Inertia	-Lectures 18,19,20 (power point slides on BB). -Watch videos for week 6		
Week - 7	-Moment of Inertia -Planar Kinetic Equations of Motion	- Read: Chapter-17, Sec.'s (1,2&3) - Or -Lectures 21&22 (power point slides on BB). Watch videos for week 7	-Quiz #4 -H.W.#6 -Yuja/Video Quiz	- Quiz #4 on Thursday, July 23 rd , for 30 min. -H.W.#6 due on Sunday, July 26 th , at 11:59 pm. -Yuja Quiz due on Sunday at 11:59 pm
Week - 8	- Kinetic Energy, Principal of Work and Energy for Rigid Bodies	- Read: Chapter -18, Sec.'s(1-4,&5) Or -Lectures 23&24 (power point slides on BB).	-Exam #4	- Exam #4 on Thursday, July 30th End of the course.

The above schedule, policies, and assignments in this course are subject to change in the event of extenuating circumstances or by mutual agreement between the instructor and the students.

Harassment Policy

The department has a zero-tolerance policy for harassment. Engagement in any behavior considered harassment will be reported to the proper authorities. In addition to generally understood forms of harassment, the department also treats the following behavior as harassment:

- Repeated emails and/or calls regarding subjects that have already been addressed. Once a decision has been made, or a question answered, a student who continues to ask the same question will be given a warning by the recipient of the email/call. If the student continues, the behavior will be reported. Questions that seek understanding of course material are not harassment, but repeated questions about a grade or an administrative decision are.
- Grades are NOT negotiable, ever. If you believe a grading mistake has been made, you must follow the process described in the UTEP catalog. Any request for a grade elevation that is NOT based on a mistake is considered harassment and will be reported immediately.