

California State University, Chico
Mechanical & Mechatronic Engineering & Advanced
Manufacturing

MECH 320 Dynamics Spring 2022

Instructor:	Mr. Jason Tancher	
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Office hours:	MW 11-11:50 AM or by appointment / Zoom	
Class days and times	Section 01	Section 02
	MWF 10-10:50 AM	MWF 12-12:50 PM
Classroom:	PLMS 112	PLMS 112
Prerequisites:	CIVL 211, MATH 260 (concurrent) (Flowchart)	

Course Usage of Blackboard Learn

Copies of the course syllabus and all assignments may be found on Blackboard Learn. You are responsible for regularly checking the online resources, which is accessed through the [Chico State Portal](#). The course schedule, homework assignments, solutions, and other essential information will be provided through Blackboard Learn.

Course Description and Goals

Kinematics and dynamics of mechanical systems composed of rigid bodies. Moments and products of inertia, forces of interaction, inertia forces and torques. Equations of motion of non-planar systems.

Student Learning Objectives

For students to learn how to predict the motion and forces causing that motion of physical systems which are adequately modeled as collections of particles and rigid bodies with emphasis on formulating equations of motion of complex systems using a rational set of rules.

Required Texts/Readings

Textbook

Hibbeler, R.C., Engineering Mechanics: Dynamics, Twelfth Edition, Prentice Hall, 2010

You may use a newer version of the textbook, but this is what will be referenced this semester. Newer version have different corresponding homework problems, so all homework will be made available on Blackboard

Other readings

PPI Mechanical Engineering Reference Manual for the PE Exam, 13th Edition

I purchased this book to study for the PE exam and I wish I had purchased it as a student. I will be using it as a second reference for course materials. I will have it in my office if you want to see what it looks like.

Classroom Protocol

This class is being taught in person and it is expected that all students will arrive on time to all classes scheduled. Face coverings are required for all persons in campus buildings at all times. Anyone who is unable to attend class should make arrangements with fellow students to stay up to date with notes and assignments.

Emails

In the event I need to contact members of the class or make urgent announcements regarding tests, class cancellations, etc., it will be done via your WildcatMail email account. I do not plan to use this method of communication frequently, but I do expect that information sent this way will be received. University policy requires students to monitor their WildcatMail accounts. If you have another preferred email provider, you may set up automatic forwarding of your WildcatMail to that address. Details are available at www.csuchico.edu/stcp/email.

Cell Phones

Simple request: Turn them off. A ringing phone is a severe disruption of course activities and will result in the offending student's immediate dismissal from that day's class.

Dropping and Adding

You are responsible for understanding the policies and procedures about add/drops, academic renewal, etc., found in the [CSU Chico University Catalog](#). You should be aware of the new deadlines and penalties for adding and dropping classes.

Assignments and Grading Policy

The following weighting will be given to the homework, tests and comprehensive final exam:

Homework	20%
4 Quizzes	15%
Test 1	10%
Test 2	10%
Test 3	15%
Final Exam	30%

Homework

Homework will be assigned regularly throughout the semester and is an integral part of the learning experience for this class. Unless otherwise specified, homework is due the second class meeting after it is assigned. For example, homework assigned on Monday is due on Friday; homework assigned on Wednesday is due on Monday, etc. This algorithm allows for questions on assigned homework during the intermediate class meeting.

Homework is due at the **beginning** of the designated class period. Homework submitted after the first few minutes of class will result in a 10 point deduction. Homework will not be accepted after the class meeting without documentation of extreme extenuating circumstances. See the Homework Guidelines document for instructions on format, content, etc.

Exams

There will be 3 fifty minute tests along with a two hour comprehensive final exam. Tests are closed book, closed note, and cell phones are not permitted during exams. A formula sheet will be provided during the exam that will provide all of the essential information required to successfully complete the calculations.

University Policies and Campus Resources

Academic Integrity

Students are expected to be familiar with the University's Academic Integrity Policy. Your own commitment to learning, as evidenced by your enrollment at California State University, Chico, and the University's Academic Integrity Policy requires you to be honest in all your academic course work. Faculty members are required to report all infractions to the Office of Student Judicial Affairs. The policy on academic integrity and other resources related to student conduct can be found on the [Student Judicial Affairs web site](#).

Additional details regarding Policy on Academic Integrity and Establishment of the Academic Integrity Council:

<https://www.csuchico.edu/pres/em/2018/18-011.shtml>

Americans with Disabilities Act

If you need course adaptations or accommodations because of a disability or chronic illness, or if you need to make special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. Please also contact Accessibility Resource Center (ARC) as they are the designated department responsible for approving and coordinating reasonable accommodations and services for students with disabilities. ARC will help you understand your rights and responsibilities under the Americans with Disabilities Act and provide you further assistance with requesting and arranging accommodations.

[Accessibility Resource Center](#)

530-898-5959

Student Services Center 170

arcdept@csuchico.edu

Blackboard ALLY

Chico State is committed to providing you the best learning experience possible. With this goal we have activated Blackboard ALLY in your courses. ALLY is a revolutionary product that focuses on making digital course content more accessible to all students. You will now be able to download any content in this course in the format that fits best with your learning style. PDF, HTML, .EPUB and Audio files are now available for most content items. Here is a link to more [information on formats available](#) as well as what each format offers. Should you have any questions or experience issues while using ALLY please contact the Office of Accessible Technology and Services at oats@csuchico.edu or 530-898-6532.

Disclaimer: All links open in a new window.

Course Title/Number Course Schedule

(Note: subject to change with fair notice.) List the agenda for the semester including when and where the final exam will be held.

Week	Topics, Readings, Assignments, Deadlines
1	Prerequisite Review
2	Kinematics of a Particle
3	Curvilinear and Relative Motion
4	Kinetics and Newton's 2 nd Law
5	Equations of Motion
6	Test 1
7	Kinetics of a Particle - Work and Energy
8	Spring Break
9	Kinetics of a Particle - Impulse and Momentum
10	Test 2
11	Planar Kinematics of a Rigid Body
12	Planar Kinematics of a Rigid Body – Force and Acceleration
13	Planar Kinematics of a Rigid Body – Work and Energy
14	Planar Kinematics of a Rigid Body – Impulse and Momentum
15	Test 3
16	Review
17	Final Exam

Refer to Blackboard Learn for the latest schedule