

ME 3250-3250L – Machine Design / Lab

Fall 2026

First, some basic but important information

Who is your instructor?

My name is Pezhman Hassanpour. You can call me Dr. Hassanpour, Dr. H. “Professor” is fine too. I am an assistant professor at the Department of Mechanical Engineering. I am also a registered professional engineer in California. My research interest is in the general area of System Dynamics and Controls.



How can you get help from me?

Email: phassanpour@cpp.edu

Phone: (909) 869-3622

Webpage: <https://www.cpp.edu/faculty/phassanpour/>

Office: Room 17-2117

When are we going to meet?

We will have in-person lectures. I will hold in-person office hours too.

Lectures: Thursdays 8:00 AM – 10:45 AM, Bldg. 17 Rm 2133

Laboratory: Tuesdays 8:00 AM – 10:50 AM, Bldg. 17 Rm 2660

Office hours: Tuesdays 11:00 AM – 11:50 AM
Thursdays 3:00 PM – 4:30 PM

Feel free to reach out if you require an alternative meeting time. I am here to assist and accommodate your schedule.

What material do you need to have for this course?

Textbook: *Shigley's Mechanical Engineering Design* by Richard G. Budynas and J. Keith Nisbett, McGraw-Hill, 2024 release

Access to McGraw-Hill Connect is required to complete assignments.

All other course material and information will be available and accessible on Canvas.

What do you need to know before taking this course?

Prerequisite: MFE 2010 or MFE 201; MFE 2010L or MFE 201L;
C- or better in ME 2150 or ME 215, and ME 3190 or ME 319

Corequisite: ME 3250L

What is this course about?

In a nutshell, this course focuses on the analysis, design, and selection of machine components including shafts, fasteners, springs, bearings, gears, clutches, brakes, and flexible machine elements such as belts and chains. Upon successful completion, you will earn 3 units of lecture credit for ME 3250 and 1 unit of laboratory credit for ME 3250L.

Course Description

This course covers the analysis, design, selection, and application of machine components including shafts, fasteners, springs, brakes, clutches, gears, flexible machine elements, and bearings; lubrication of machine elements; design methodologies; and the design of a simple machine.

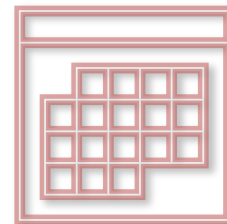
Learning Outcomes

Upon successful completion of this course, you will be able to apply a systematic approach to the analysis, design, and selection of machine components. In particular, you will be able to:

1. Design and analyze machine components such as shafts, fasteners, springs, gears, belts, chains, and bearings.
2. Select appropriate machine components using engineering principles and design criteria.
3. Apply failure theories, fatigue considerations, and design standards in machine design applications.
4. Use engineering resources such as handbooks, standards, manufacturer catalogs, and technical references to support design decisions.

Mark your calendar.

Date	Academic Instruction
August 20	Classes begin for all students
September 7	Labor Day
October 6	Midterm Exam 1
November 11	Veterans Day
November 17	Midterm Exam 2
November 26	Thanksgiving Day
December 6	Classes end for all students
December 8	Final Exam: 7:00 AM - 8:50 AM (in lab)



How will you be graded?

I will use a variety of tools to assess your learning progress. Here is the list of these tools and their contributions to your final score.

Assessment Tool	Contribution	ME 3250	ME 3250L	Applicable AI Policy
Homework assignments	10%	X		Tier 2
Term Project	20%		X	Tier 3
Two midterm exams	40%	X		Tier 1
Cumulative final exam	30%	X		Tier 1
Total	100%	80%	20%	

ME 3250 and ME 3250L are *combo courses*. You will achieve the same grade for both.

My Grading Scale

I will utilize the following schedule as a general guideline for converting scores into letter grades.

Score Range	Letter Grade	Score Range	Letter Grade	Score Range	Letter Grade
90-93%	A-	94-100%	A		
80-82%	B-	83-85%	B	86-89%	B+
70-72%	C-	73-75%	C	76-79%	C+
56-59%	D-	60-64%	D	65-69%	D+
		≤ 55%	F		

My Grading Philosophy

As we move through the semester, I'll keep your grades updated on Canvas so you always have a clear picture of your progress. I encourage you to check regularly and use this to stay on track and identify areas where you might need a little extra attention. Remember, I'm here to help if you need guidance!

If you have any questions or concerns about a grade, please don't hesitate to reach out. To make sure we can resolve things promptly, I ask that you contact me **within seven days** of the grade being posted. This way, we can address any issues quickly and efficiently.

Everything we cover in lectures, homework, quizzes, and reading assignments is fair game for exams. My goal is to ensure that our assessments reflect the work we've done together in class.

I believe in creating a fair and supportive environment where everyone has the same opportunity to succeed. To maintain this fairness, I don't offer extra credit opportunities. This decision helps ensure that our grading process remains consistent and transparent for everyone.

I'm committed to supporting you throughout this course and want you to feel confident in your ability to succeed. If you ever feel unsure about something, please don't hesitate to reach out—I'm here to help!

Homework Assignments

I will regularly assign homework to help reinforce the key learning outcomes of the course. You can generally expect a one-week timeframe for each assignment, starting from the posting date, before I post the solutions. Research has shown that completing homework on time is closely linked to better performance in exams, so I encourage you to submit your assignments on time—even though they may not contribute significantly to your final grade.

I recognise that individuals may encounter specific circumstances or challenges. Accordingly, late submissions will be accepted up to one week following the original due date, with a **5% penalty assessed per day**. Please be advised that this extension is not applicable for assignments scheduled immediately prior to tests, as timely posting of solutions is necessary to support students' test preparation.

I strongly recommend that you keep a journal to document your solutions for assignments and lab reports. Clear communication is a critical skill in engineering, and I am dedicated to teaching you how to solve problems effectively and communicate your solutions clearly, both in writing and visually. I hope that you will mirror this commitment by presenting your assignments, lab reports, and exams in a well-organized and professional manner. This aligns with the high standards expected in the field and will help you grow as a skilled engineering student.

If you ever need assistance with communicating engineering concepts, please don't hesitate to reach out. Your success is my priority, and I'm here to support you in expressing complex ideas effectively.

Exams

For both midterm and final exams, you can use the official electronic textbook. I do not allow any other electronic books and electronic notes. An appropriate paper-based note will be permitted for reference. The size and restrictions on the note will be announced at a later time. Please be aware that electronic devices, including cell phones and smartphones, are strictly prohibited during exams. Having an engineering calculator is crucial for solving exam problems. At the start of the exam, I may ask for all cell phones, tablets, and laptops to be surrendered.

Throughout the exam, no bathroom breaks or other interruptions will be accommodated. It is important to be present for the full duration. However, if you have approved accommodations from the Disability Resource Center (DRC), please let me know in advance so I can make arrangements to accommodate you discreetly.

An unexcused absence from the exam will result in a grade of zero. I will only consider make-up exams for extraordinary circumstances, such as documented medical emergencies or citizenship duties (e.g., jury service). If you find yourself in need of a make-up exam, please reach out to me as soon as possible with the details, and I will review the situation on a case-by-case basis to determine if an alternative arrangement is appropriate.

Term Project

The term project provides an opportunity for you to apply what you've learned in class to a real-world scenario. You will work on the project in groups of up to two students. For more detailed information, including milestones, please refer to the material posted on Canvas.

Recommended Calculator

The National Council of Examiners for Engineering and Surveying (NCEES) administers the exams engineers must pass for Professional Engineer certification: FE and PE exams. NCEES permits only specific nonprogrammable calculators for these exams (<http://ncees.org/exams/calculator/>). The following are two approved calculator models. If you plan to take the FE exam or are looking for a new calculator, I highly recommend choosing from the following options.

- Casio: fx-115ES Plus
- Texas Instruments: TI-36X Pro

Expectations and Academic Honesty

As engineers, we are dedicated to participating in scholarly discussions with integrity and maintaining the highest standards of ethical research. We will always show respect for everyone in our academic community, including students, faculty, and staff.

We commit to submitting only work that is entirely our own. This includes refraining from using material created by others – whether from peers, external sources, or the internet – without proper citation. It is our responsibility to ensure that our work adheres to the principles outlined in CPP's Academic Integrity guidelines. <https://www.cpp.edu/studentconduct/academic-integrity/index.shtml>

It is crucial to understand that academic dishonesty is taken very seriously and may lead to significant consequences. These can range from losing credit for an assignment or test to failing the course or, in severe instances, expulsion. Please be aware that all cases of academic dishonesty, regardless of their severity or consequences, will be reported to the Office of Student Conduct and Integrity.

We recognize the importance of fostering a supportive and respectful learning environment for everyone. Disruptive behavior, especially if persistent or significantly interfering with classroom activities, may result in disciplinary action. In cases where such behavior violates the university's conduct code, students may be referred to the Office of Student Conduct and Integrity. For more details, please visit the CPP Student Conduct and Integrity website. <https://www.cpp.edu/studentconduct/>

Use of AI-Based Tools in This Course

Generative AI tools, such as ChatGPT, Copilot, Claude, Gemini, and similar systems, may be used only as permitted within the AI tier assigned to a particular assignment, laboratory activity, project milestone, or assessment. This course employs a three-tier AI policy:

Tier 1	No AI Assistance Permitted (No AI)
Tier 2	AI for Verification and Feedback Only (Check My Work)
Tier 3	AI-Assisted Work with Attribution (Help Me Work)

For Tier 2 activities, AI may only be used **after a complete solution has been developed**. A complete solution may be correct or incorrect, but it must exist before Tier 2 begins. AI may not be used to complete unfinished work, provide the next step in a solution, or overcome a lack of time or understanding.

Any use of AI under Tier 2 or Tier 3 must be clearly identified within the submitted work as "**Tier 2 AI Use**" or "**Tier 3 AI Use**", respectively.

Students remain fully responsible for all submitted work, including the accuracy of calculations, technical claims, design decisions, references, CAD models, engineering drawings, and conclusions. The use of AI does not transfer responsibility from the student to the software.

Engineering software (CAD, CAE, drafting, and simulation tools) is encouraged; however, students must remain the primary creators of all engineering models, drawings, analyses, and designs. AI-assisted features within such software are generally limited to Tier 2 functionality unless explicitly authorized by the instructor.

In this course, the burden does not fall on the instructor to prove that AI was used. Rather, the burden falls on the student to demonstrate authorship, understanding, and appropriate compliance with the assigned AI tier. Students may be asked to explain their work, describe how AI was used, provide documentation of AI interactions, and demonstrate that they understand and can reproduce the submitted work.

Students may be required to provide documentation of AI usage and demonstrate authorship and understanding of submitted work. Failure to comply with the requirements of an assigned tier, properly identify AI use, provide requested documentation, or demonstrate understanding of submitted work may constitute academic misconduct.

Detailed tier definitions, examples, CAD-specific guidance, documentation requirements, and visual aids are provided in the Course AI Policy available on Canvas.

Getting the Most from Your Course

Why Attending and Participating Matters

Attendance and participation are important for your success in this course. While attendance does not directly impact your grade, class sessions provide valuable opportunities to engage in discussions, collaborate, and deepen your understanding of the material. Your commitment to participating will enhance your learning experience and contribute to a productive and rewarding semester. To encourage active engagement, I will not provide lecture notes, as attending class is essential for staying connected and involved. If attending becomes difficult due to unforeseen circumstances, please let me know so we can discuss a solution.

What is success and how to be successful in this course?

Success means different things to different people, but in this course, a grade of D represents the minimum standard for passing. However, true success goes beyond merely achieving a passing grade—it involves deeply engaging with the learning process and striving for a profound understanding of the subject matter. To succeed, you should actively participate in discussions, collaborate with peers, and interact meaningfully with the course material. Cultivate a curious mindset by asking questions and exploring topics in depth and take advantage of available resources such as office hours to clarify doubts and strengthen your grasp of the content. Consistent effort and effective time management are essential for mastering the material and achieving your goals. Remember, excelling in this course isn't just about the grade – it's about embracing a journey of growth and discovery, developing skills, and gaining insights that will serve you well beyond the classroom.

Campus Resources

Here are some of the campus resources that are available to you.

Accessibility

I am dedicated to ensuring the accessibility of my materials. If any changes can be made to enhance their accessibility, please inform me. Students who fall under the provisions of the Americans with Disabilities Act and require reasonable modifications, special assistance, or accommodations for this course should promptly contact the *Disability Resource Center* (DRC). If you have a documented disability, whether physical, learning, or psychological, and need academic accommodation, it is advisable to get in touch with the DRC Office as early in the semester as possible. All discussions will be confidential. For further information, please visit the DRC online at <https://www.cpp.edu/drc/index.shtml>, in person at Bldg. 9, Room 103, or by phone at (909) 869-3333.

Other Resources

This campus offers a vast array of resources designed to support your success. Everyone is committed to helping you achieve your goals. Visit <https://www.cpp.edu/studentsuccess/directories/index.shtml>

Creating a Collaborative and Inclusive Learning Community

Engineers excel in collaborative teams, and diverse groups are proven to be more productive. I prioritize creating an inclusive environment in my classroom where every student feels they belong, regardless of their background. I value the unique perspectives from different races, genders, nationalities, ethnicities, religions, social statuses, ages, sexual orientations, political beliefs, and physical or learning attributes. Embracing diverse viewpoints enhances our problem-solving skills and deepens our understanding of engineering's complexities.

Communication and Course Access

I will occasionally communicate with the entire class through the campus email system, so it is important that you check your university-issued email regularly. Additionally, I expect you to use Canvas to access course materials. Please ensure that you have proper access to the course and that everything is functioning smoothly.

Privacy

The data I collect, such as grades, attendance, communications, and activity on the learning management system, will be used to personalize your learning experience and provide tailored responses to your questions, both verbally and in writing. I want to assure you that I am committed to maintaining the privacy of your data, in full compliance with the Family Educational Rights and Privacy Act (FERPA) and university policies.

To assess the effectiveness of teaching methods and content delivery, I will analyze aggregated data that does not include any identifiable information about individual students. If you prefer, you can choose to exclude your information from this aggregated dataset. Please notify me in writing of your decision, and I will respect it.

It's important to note that your choice to include or exclude your data from the aggregated pool will not affect your access to learning materials, how your work is evaluated, or your final grade. Your learning experience remains my top priority, regardless of this decision.

Disclaimer

In exceptional circumstances, revisions to this syllabus and its contents may be necessary. If any changes are required, I will communicate them transparently through Canvas announcements or in-class discussions. While I will make every effort to minimize any impact on you, I kindly ask for your understanding and flexibility in accommodating these adjustments if they occur.

(See next page for tentative topic schedule.)

Tentative Topic Schedule

Week#	Week of	Topic	Notes
1	Week 1 (Aug 17-23)	Chapter 7: Sections 7-1 to 7-8	
2	Week 2 (Aug 24-30)	Chapter 8: Sections 8-1 to 8-12	
3	Week 3 (Aug 31-Sep 6)	Chapter 10: Sections 10-1 to 10-15	
4	Week 4 (Sep 7-13)	Chapter 11: Sections: 11-1 to 11-6	
5	Week 5 (Sep 14-20)	Sections 11-7 to 11-12	
6	Week 6 (Sep 21-27)	Chapter 12: Sections: 12-1 to 12-5 Sections: 12-6* to 12-15*	
7	Week 7 (Sep 28-Oct 4)	Chapter 13: Sections: 13-1 to 13-8	
8	Week 8 (Oct 5-11)	Sections: 13-9 to 13-16, 13-17*	Midterm Exam 1
9	Week 9 (Oct 12-18)	Chapter 14: Sections: 14-1 to 14-8	
10	Week 10 (Oct 19-25)	Sections: 14-9 to 14-17, 14-18*, 14-19*	
11	Week 11 (Oct 26-Nov 1)	Chapter 15: Sections: 15-1 to 15-8	
12	Week 12 (Nov 2-8)	Sections: 15-9 to 15-15	
13	Week 13 (Nov 9-15)	Chapter 16: Sections: 16-1 to 16-6, 16-7*, 16-8*, 16-9*	
14	Week 14 (Nov 16-22)	Sections: 16-10*, 16-11*, 16-12	Midterm Exam 2
15	Week 15 (Nov 23-29)	Chapter 17: Sections: 17-1 to 17-3	Thanksgiving Break
16	Week 16 (Nov 30-Dec 6)	Sections: 17-4 to 17-6	Term Project Presentation

*: Material that will be covered if time permits