MECH306: Equation Solving Techniques
Spring 2023

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Office: OCNL 416
Office hours: Mon 9-9:50AM
Tues/Thurs, 11-11:50AM
Sections: Lecture (PLMS 205): Tues/Thurs, 10-10:50AM
Activity (PLMS 205): Weds, 2-3:50PM

Course Description and Goals
Numerical analysis, analytical methods, and equation solving techniques for mechanical engineering design. Structured problem formulation, parametric studies, introduction to programming concepts, and optimization for design.

Prerequisites

Student Learning Objectives
After completion of this course, students will be able to:

• To learn how to apply a range of numerical methods for solving algebraic and differential equations that occur in engineering analysis and design.
• To use computer programming concepts and apply them to solve engineering problems.
• To learn how to use equation-solving software to solve algebraic and differential equations.

Course Usage of Blackboard Learn and OneNote
Copies of the course syllabus, all assignments, schedule, and due dates can be found on Blackboard Learn. You are responsible for regularly checking Blackboard for updates and announcements, which can be accessed through the Chico State Portal. All course notes will be shared through a OneNote Class Notebook which can be accessed through Blackboard or Microsoft’s OneNote software.
Classroom Etiquette and Attendance
During classroom sessions, students are expected to be completely engaged and committed to the class (no personal web surfing, messaging, social media, etc.). Attendance is required and students will receive credit for active and engaged participation in the course. If you are unable to attend a class due to an emergency or any other reason, please notify the instructor promptly (before class if possible).

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.

Grading Policy
Your grade will be based on:
- 20% Attendance, Conduct, Participation, Quizzes, Homework
- 20% Activities
- 60% Exams (Curved)

A ≥ 93% > A- ≥ 90% > B+ ≥ 87% > B ≥ 83% > B- ≥ 80% > C+ ≥ 77% > C ≥ 73%
73% > C- ≥ 70% > D ≥ 60% > F

Late Assignments
Late assignments will lose 20% of the full credit for each day they are late. A cover letter will be required for consideration of a reduced penalty, this should be submitted through Blackboard (not email) and will be considered at the end of the semester. Always upload any assignments to Blackboard and re-download them to confirm they have been submitted properly to avoid late penalties due to submission errors.

Equipment / Textbooks / Additional Resources

Computer and Software (Required)
You are required to have a PC-based laptop capable of running MATLAB, Microsoft Excel and Python.

Course Textbook (Recommended)
You are welcome to use either the print version, enhanced e-book version, or other digital copy or pdf.

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 coursework. 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 website.

**IT Support Services (Optional)**
Computer labs for student use are located on the first and fourth floor of the Meriam Library, Room 116 and 450, Tehama Hall Room 131, and the Bell Memorial Union (BMU) basement. You can get help using your computer from IT Support Services; contact them through the ITSS web site. Additional labs may be available to students in your department or college.

**Student Services (Optional)**
Student services are designed to assist students in the development of their full academic potential and to motivate them to become self-directed learners. Students can find support for services such as skills assessment, individual or group tutorials, subject advising, learning assistance, summer academic preparation and basic skills development. Student services information can be found on the current students page of the CSU Chico web site.

**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
   arcdpt@csuchico.edu

**Student Learning Center (Optional)**
The mission of the Student Learning Center (SLC) is to provide services that will assist CSU, Chico students to become independent learners. The SLC prepares and supports students in their college course work by offering a variety of programs and resources to meet student needs. The SLC facilitates the academic transition and retention of students from high schools and community colleges by providing study strategy information, content subject tutoring, and supplemental instruction. The University Writing Center has been combined with the Student Learning Center. You can also visit the Student Learning Center web site.
A Final Note on Equity, Diversity, and Inclusion

It is important to me that this course is accessible to each and every one of you. If there is any reason why the format of the course creates unique difficulties to you, please find time to talk with me. This includes those that have a physical or learning disability, those who have other emotional or physiological challenges, those of you who have past experiences that make college attendance or class content anxiety producing, those of you who are first-generation students and may not understand the university system, those of you who feel you can’t actively participate, those of you who have more responsibility than the typical college student (such as dependent parents, children, or an especially heavy workload outside of school), those of you with financial hardships, and any other situations that I might not be able to anticipate.

My objective in this course is to assess your ability to learn and apply knowledge related to this subject matter. This should never be a factor of anything other than your own talents and efforts. The earlier you come and see me, the more I can do to try to work with you to alleviate any unique disadvantages you may face. I would prefer that you come to speak with me in the first two weeks.

Schedule (Tentative)

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<td>Spring Break</td>
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Document Change History

1/22/2023  Version 1, Original Document