UTTyler ENGINEERING

Department of Mechanical Engineering
Phone: +1.903.566.7003
Fax: +1.903.566.7148
Uttyler.edu/engineering

MENG 4326 – Finite Element Analysis
Course Syllabus

Semester / Year	Spring 2026
Catalog Description	A required introductory course providing undergraduate engineering students with fundamentals of finite element (FE) concepts, analysis, and applications in real-world problems. A software package will be selected for use a learning support tool, which also provides students with a marketable skill. The course includes a project as a major component.
Prerequisites	MENG 3401 – Thermodynamics, MENG 3309 Mechanical Systems Design (pre-requisite or co-requisite)
Section Number	052
Instructor Name	Dr. Ermias Gebrekidan Koricho
Contact Information	Email: ekoricho@uttyler.edu Phone: 903-730-3895 Office: A220
Class Type / Instruction Mode / Location	Face to face / Lecture/ HEC Ctr 0C204
Class Time	Tu/Th 8:00 AM – 9:20 AM
Office Hours	Tu/Th 11:30 AM – 01:00 PM or by appointment
No. of Credits	3 credits (Lecture)
Required Textbook & Resources	• Finite Element Analysis: Theory and Application with ANSYS – Saeed Moaveni • Finite Element Simulations with ANSYS Workbench 24: Theory, Applications, Case Studies – Huei-Huang Lee • Students taking courses in Mechanical Engineering (ME) are expected to have a laptop at their disposal. For more details, refer to the Student Laptop Policy at the Department of Mechanical Engineering https://uttyler.smartcatalogiq.com/en/2022-2023/Catalog/College-of-Engineering
Optional References	• Analysis of Machine Elements Using SolidWorks Simulation 24 – S.S. Nudehi and J.R. Steffen
Additional Rules and Requirements	Students may discuss their homework solutions with one another, but each student must submit their own, independent solution (i.e. you may not just copy someone else's homework. AI tools are allowed to support students' learning and productivity, provided that their use aligns with academic integrity standards. When required, students must disclose their use of AI. Since the mechanical engineering program is designed to prepare students for professional practice, all submitted work (e.g., homework, lab reports, projects, presentations) is expected to meet professional standards. Work that does not reflect professional quality may be subject to grade reductions, even if professionalism is not explicitly listed in the grading rubric.
Evaluation Method	**Grading System:** Assignments 20% Quizzes 5% Midterm Exam 25 % Final Exam 25 %

	Final Project 25%
Grading Policy / Scale	Letter grades, scale: A: 90 – 100; B: 80 – 89; C: 70 – 79; D: 60 – 69; F: < 60
Important Events / Dates	Census date: 01/26/2026 First drop for non-payment: 02/04/2026 Exam date: Mid-term (March 03, 2026), Final Exam (April 28, 2026) Last date to withdraw: 03/30/2026
Attendance / Makeup policy / other rules	Regular attendance is imperative if you want to do well in this course. Therefore, regular attendance is highly recommended. In case you have to miss a class, it is your responsibility to keep up with the class work and be informed of all announcements made in the class on HomeWorks, tests etc. No makeup exams will be authorized without providing an official document showing that your absence is in line with university rules.
Course Learning Objectives / ABET & PEOs Relation	By the end of this course, students will be able to: 1. Demonstrate an understanding of the fundamental concepts and general steps of the finite element analysis (FEA). 2. Apply science and math concepts using FEA tools to identify, formulate and solve engineering problems. 3. Apply FEA techniques to engineering design with broader considerations. 4. Select and integrate FEA for the appropriate part in the design process to support and justify design decisions with broader considerations.
Tentative Topics / Course Plans	1. Introduction to Finite Element Formulation approaches 2. Introduction to FE element types to design the desired physical model 3. Analysis of 1-D, 2-D, and 3-D problems using commercial software such as Ansys Workbench and/or SolidWorks Simulation 4. FEA Applications in real-world problems (Case Studies): solid mechanics, fluid, thermal, and modal analysis.
University Policies	https://www.uttyler.edu/offices/academic-affairs/files/syllabus-information-rev122025.pdf

Note:
The instructor reserves the right to modify the syllabus at any time during the semester to accommodate unforeseen circumstances, enhance the learning experience, or ensure the course objectives are met. Any changes will be communicated promptly to all students.