



MENG 4326 – Finite Element Analysis Course Syllabus

Semester / Year	Spring 2023
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 (can be a pre-requisite or co-requisite)
Section Number	001
Instructor Name	Chung Hyun Goh
Contact Information	Email: cgoh@uttyler.edu Phone: 903-566-6125 Office: RBN 3007
Class Type / Instruction Mode / Location	Face to Face / RBN 3038 (Tyler)
Class Time	Tu/Th 8:00 AM – 9:20 AM
Office Hours	Tu/W/Th: 11:00 AM – 12:00 PM or by appointment
No. of Credits	3 credits
Required Textbook	Finite Element Analysis: Theory and Application with ANSYS – Saeed Moaveni
Optional References	Finite Element Simulations with ANSYS Workbench 19: Theory, Applications, Case Studies – Huei-Huang Lee
Additional Rules and Requirements	N/A
Evaluation Method	Midterm Exam 20% Final Project/Presentation/Poster 30% Tutorial Flipped Classes 10% Homework 15%, Quizzes 15% Course Participation 10% (In-Class Examples, Assign submissions, etc.)
Grading Policy / Scale	Letter grades grades/ A=>90, B=>80, C=>70, D=>60, F<60
Important Events / Dates	Census date: 01/23/2023 Exam date: TBD Final date: Per published schedule by the registrar – TBD
Attendance / Makeup policy / other rules	Regular attendance is imperative if you want to do well in this course. Therefore, <u>regular attendance is required</u> . 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 homework's, tests etc. <u>No makeup</u> .
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). (SO1)



	<ol style="list-style-type: none">2. Apply science and math concepts using FEA tools to identify, formulate and solve engineering problems. (SO1)3. Apply FEA techniques to engineering design with broader considerations. (SO1)4. Select and integrate FEA for the appropriate part in the design process to support and justify design decisions with broader considerations. (SO3)
Tentative Topics / Course Plans	<ol style="list-style-type: none">1. Introduction to Finite Element Formulation approaches2. Introduction to FE element types to design the desired physical model3. Analysis of 1-D, 2-D, and 3-D problems using ANSYS FE software FEA Applications in real-world problems: solid mechanics, fluid, thermal, and modal analysis
University Policies	https://www.uttyler.edu/academic-affairs/files/syllabus_information_2021.pdf