



ENGR 110: Introduction to Engineering & Technology

Section 02E, Course Syllabus, Fall 2026

INSTRUCTOR INFORMATION

Instructor	James Tague, Adjunct Professor
Office Location	AG/ET 216
Office Hours	Tuesday/Thursday 8:00 AM – 9:15 AM
Phone	Office: 903-886-5474
University Email Address	James.Tague@etamu.edu
Preferred Form of Communication	Email
Communication Response Time	Typically, within 48 hours on weekdays for email

COURSE INFORMATION

Class Meeting Schedule	Refer to the detailed course schedule in this syllabus
Class Meeting Dates	Tuesday/Thursday 9:30-10:45
Classroom	AG/ET 125
Textbook(s) Required	None
Software Required	Microsoft Office - MS Word, Excel, PowerPoint
Optional Texts and/or Materials	Engineering Fundamentals – An Introduction to Engineering, Saeed Moaveni, 5 th Edition

COURSE DESCRIPTION

This course provides a solid foundation in fundamental skills needed for freshmen and transfer students to academically succeed and professionally prepare them for challenges within the disciplines of Engineering and Technology Management. The project-based assignments will provide students with opportunities to apply mathematics to solve engineering problems, acquire teamwork skills, practice written and verbal communication skills, and enhance problem-solving and design skills. Early understanding of these skills will assist students throughout their undergraduate experience.

Student Learning Outcomes

Upon successful completion of this course, students will achieve the following learning outcomes:

- Understand key engineering principles and the engineering design process
- Recognize engineering disciplines and professional & ethical responsibilities
- Understand and be able to apply mathematical, chemical, and physical laws to model and analyze, and investigate engineering problems
- Know basic quantities such as length, time, mass, force, temperature, and their related variables
- Be able to use scientific notation and interpret scales from nano (10^{-9}) to giga (10^9)
- Develop skills in using engineering computational tools to record, organize, and analyze data.
- Understand basic characteristics of materials such as metals, plastics, glass, and concrete
- Be able to select and apply appropriate engineering tools & techniques to solve problems
- Be able to verify and validate engineering designs or products
- Understand the fundamentals of teamwork
- Demonstrate the capacity to function in multi-disciplinary teams
- Understand interconnectedness of global dynamics and potential impact as an engineer (local, regional, global)
- Demonstrate effective oral and written communication skills through:
 - Class participation
 - Effective communication among team members
 - solving engineering problems
 - Effective engineering report writing

Instructional Method

The instructional methods in this course include lectures, class discussion and participation, informal quizzes, homework assignments, team projects, and exams. The team projects and class participation will include the use of teamwork for students to learn from each other under a leader's supervision, similar to a real-world engineering environment.

SPECIFIC COURSE REQUIREMENTS

Prerequisites

Prerequisites: MATH 142 or MATH 2312 (precalculus), or concurrent enrollment.

Required Technical Skills

Students must be able to access the Internet, use the D2L learning management system, and use Microsoft Office tools (Word, Excel, PowerPoint). Students should know how to use a scientific calculator.

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Shoes & Attire

This course requires laboratory work with power tools, and thus, closed toe shoes are required for safety. In addition, as described in safety training, suitable attire will be required to minimize the risk of injury. Hoodies should not be worn over the head during class, nor should Bluetooth and similar devices be worn in the ears during class.

Course Structure

This course is organized into four modules:

Module 1: Introduction to Engineering provides an overview of the engineering profession and the major engineering disciplines. Topics include notable engineering achievements, engineering failures and disasters, professional responsibilities, and ethical decision-making in engineering.

Module 2: Fundamental Dimensions, Quantities, and Units in Engineering introduces the basic measurements, physical quantities, dimensions, and units commonly used in engineering. Students will practice applying these fundamentals to basic engineering calculations and problem-solving.

Module 3: Engineering Design introduces the engineering design process through a team-based project. Students will develop a design proposal, construct and test a prototype, evaluate the results, make design improvements, and prepare a final design report and project journal. The specific requirements for the Engineering Design Project are described below.

Module 4: Special Topics in Engineering introduces several technical and professional topics that engineering students will encounter in later coursework and in the workplace. Topics include engineering probability and statistics, modern engineering materials, energy and power, and professional soft skills.

Modules 1, 2, and 4 will each include a homework problem set and an examination. Module 3 will be evaluated through the Engineering Design Project and its related assignments. An optional comprehensive final examination will also be offered. As explained in the grading policy, the final examination may be used to replace one of the three regular examination grades.

Engineering Design Module

The Engineering Design Module will provide students with a hands-on introduction to the engineering design process. Students will work in teams of four to design, construct, test, evaluate, and improve a balsa wood bridge. The project is intended to demonstrate how engineers move from an initial concept through prototype development, testing, analysis, redesign, and final implementation.

Each bridge must be constructed using only the approved balsa wood and adhesive materials and must span a two-foot opening. Teams will first develop an initial bridge design and submit a written design proposal describing the proposed bridge configuration, design assumptions, anticipated load paths, construction approach, and expected performance.

After the proposal is approved, each team will construct a prototype bridge. The prototype will be tested to failure by placing a series of progressively increasing weights on the bridge until it collapses or can no longer support the applied load. Teams will document the bridge's performance, identify the location and likely cause of failure, and evaluate the strengths and weaknesses of the original design.

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Using the results of the prototype test, each team will prepare a redesign plan and construct a final bridge. The final bridge will also be tested to failure using the same general testing procedure. Teams will compare the performance of the prototype and final bridges and explain how their design changes affected the bridge's strength, stability, efficiency, and failure behavior.

The Engineering Design Project will include the following required components:

- Initial bridge design proposal
- Construction and testing of a prototype bridge
- Prototype testing and redesign report
- Construction and testing of the final bridge
- Final engineering design report
- Team project journal
- Short team presentation

The team journal should document the design process, team meetings, construction activities, testing observations, design decisions, individual responsibilities, and project progress. The final report and presentation should summarize the complete design process, including the original design, prototype test results, redesign decisions, final bridge performance, and lessons learned from the project.

Although the bridge will be designed and constructed as a team project, all students are expected to participate fully in the design, construction, testing, documentation, and presentation requirements.

GRADING

The final course grade will be based on homework assignments, three examinations, and the Engineering Design Project, with each component accounting for 20% of the final grade. An optional comprehensive final examination will also be offered. The final examination may be used to replace the lowest grade earned on one of the three regular examinations, but only when the replacement improves the student's overall course grade. Students who are satisfied with their grades on the three regular examinations are not required to take the final examination.

Exam questions may be drawn from assigned homework, quizzes, and relevant material covered by the instructor during class. The optional final examination will be comprehensive. Unless otherwise noted by the instructor, all examinations will be closed-book and closed-notes. Students must bring a scientific calculator to all quizzes and examinations. The use of personal phones or other unauthorized electronic devices is strictly prohibited during examinations. A makeup examination may be offered only when the student provides the instructor, in a timely manner, with an official permit for absence that satisfies University procedures.

Students are encouraged to use standard writing and formatting tools, including spelling and grammar checkers, page and section breaks, and document-formatting templates. However, unless specifically authorized or required by the instructor for a particular assignment, the use of generative artificial intelligence tools, chatbots, or other software capable of generating text or suggesting revisions beyond individual words is prohibited. Any authorized use of such software must be fully documented. Undocumented use of these tools may constitute academic dishonesty or plagiarism.

Final grades in this course will be based on the following scale:

A	B	C	D	F
100 - 90	89 - 80	79 - 70	69 - 60	59 – 0

Overall grades will be based on a weighted average as shown below:

Assessment Type	Percent
Homework	20
Exam I	20
Exam II	20
Exam III	20
Engineering Project	20
Final	Optional
Total	100

Note: There may also be opportunities for bonus points; these will be discussed in class.

ATTENDANCE & PARTICIPATION

On-time attendance is required. Students must show up awake and ready to participate with proper attire (see below). Attendance & Participation is a graded component because, for optimum learning, students need to attend class and participate in all activities. The table below shows the grade penalty for unexcused absences for the T/R morning class (2x per week).

# of unexcused absences	< 4	4	5	6	7	>7
Grade penalty	0%	5%	10%	20%	30%	F

Coming late to class counts as half of an absence. Students should inform the instructor if they need to miss class.

Student Laboratory Safety Training

As a new campus wide initiative to ensure compliance with system requirements, to improve efficiency and streamline processes, the Department of Environmental Health and Safety has created a required Student Laboratory Safety Training.

This training covers general lab safety topics as follows:

- Personal Protective Equipment (PPE)

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- Globally Harmonized System (GHS)
- Safety Data Sheets (SDS)
- Hazard Communication (HazCom)
- Emergencies
- Physical Hazards
- Chemical Safety
- Spills
- Refrigerators / Freezers
- Glassware
- Compressed Gas Cylinder Safety
- Fume Hoods & BioSafety Cabinets
- Heat Stress

In addition to the general training, any courses with specific hazards (i.e., machines, equipment, certain chemicals, and/or processes) shall be covered by the instructor of that particular course. All instructors are responsible for ensuring students are aware and compliant with the deadlines of this requirement.

Process for Students:

- When a student registers for a course that has been identified with/ the LST Compliance Attribute, they will be automatically enrolled in the D2L "Lab Safety Training" Course.
- Student will have access on the first day of class.
- Student, by default, has a Compliance Hold "OH" placed on their Banner Profile; this will be removed once the student completes the training.
- Students will receive email notification prior to the start of the term and then once per day for the first 5 days of the semester. The students will also receive notification through D2L's Pulse App via Intelligent Agents.
- Students who have not completed the training within the first 5 days of the start of the term will begin getting an email notification on the 6th day indicating that their access to the courses associated with this training has been restricted.
- Restriction and Access to course(s) will be handled via the custom web-application.
- Students will continue to get a daily email notification until the training is complete (Instructors will be copied, so they are aware).
- On the 21st day of the term, students who have not completed the training will be notified via email that they have been dropped from the specific courses that required the "Lab Safety Training."
- On the 21st day of the term, a report will be generated, via the custom web-application, for EHS to review and to provide a written / formal request to the Registrar's Office to drop student(s) from the course(s) that they are enrolled in that have the associated LST Attribute.

Secondary method for obtaining the "drop list" would be to contact IR Office to assist w/ running a WebFocus report that would pull all students who still have a Compliance Hold Code of "OH".

COURSE SYLLABUS, FALL 2025

Day	Date	Module	Topic
Thurs	August 20, 2026	Introduction to Engineering	Introduction/Syllabus Review
Tues	August 25, 2026		The Wide World of Engineering
Thurs	August 27, 2026		Engineering Disciplines - EE, ISE, ME, CE
Tues	September 1, 2026		Engineering Marvels
Thurs	September 3, 2026		Engineering Disasters
Tues	September 8, 2026		Ethics in Engineering
Thurs	September 10, 2026		Ethics Workshop
Tues	September 15, 2026		Exam I
Thurs	September 17, 2026	Fundamental Dimensions, Quantities, and Units in Engineering	Fundamental Quantities and Units
Tues	September 22, 2026		Fundamental Quantities and Units
Thurs	September 24, 2026		Fundamental Quantities and Units
Tues	September 29, 2026		Fundamental Quantities and Units
Thurs	October 1, 2026		Fundamental Quantities and Units
Tues	October 6, 2026		Exam II
Thurs	October 8, 2026	Engineering Design	Fall Break - No Class
Tues	October 13, 2026		Engineering Design
Thurs	October 15, 2026		Project Prototype Construction
Tues	October 20, 2026		Project Prototype Construction
Thurs	October 22, 2026		Prototype Testing
Tues	October 27, 2026		Project Redesign Work
Thurs	October 29, 2026		Project Redesign Work
Tues	November 3, 2026		Final Project Testing
Thurs	November 5, 2026	Special Topics in Engineering	Engineering Probabilities
Tues	November 10, 2026		Engineering Statistics
Thurs	November 12, 2026		Modern Materials
Tues	November 17, 2026		Energy & Power
Thurs	November 19, 2026		Energy & Power
Tues	November 24, 2026		Thanksgiving Break - No Class
Thurs	November 26, 2026		Thanksgiving
Tues	December 1, 2026		Softskills in Engineering
Thurs	December 3, 2026		Exam III
	TBD		Final Exam Review
	TBD		Final Exam

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COMMUNICATION AND SUPPORT

Interaction with Instructor Statement - If you have any questions or are having difficulties with the course material, please contact your instructor. Correspondence will always be through university email (your “myLeo” mail) and announcements in myLeo online (D2L). You will not RECEIVE email through D2L, so be sure to check your ETAMU email for communication. Students are encouraged to check university email daily.

Include the Following in Emails with Instructor:

- Course name and subject in the subject line
- Salutation (Good afternoon, Dr. Jackson)
- Proper email etiquette (no “text” emails – use proper grammar and punctuation)
- Student name and CWID after the body of the email (possibly add to student signature on email)

TECHNOLOGY REQUIREMENTS

Minimal Technical Skills Needed - Students will need reliable computer and internet access for this course. Students must be able to effectively use myLeo email, myLeo Online D2L, and Microsoft Office.

Learning Management System (LMS) – D2L - All course sections offered by East Texas A&M University have a corresponding course shell in the myLeo Online Learning Management System (LMS). Below are the technical requirements:

- View the [Learning Management System Requirements Webpage](#).
- Learn more on the [LMS Browser Support Webpage](#).

MyLEO/D2L

LMS (MyLeo) - All course sections offered by East Texas A&M University have a corresponding course shell in the myLeo Online Learning Management System (LMS). Below are technical requirements

LMS Requirements:

<https://community.brightspace.com/s/article/Brightspace-Platform-Requirements>

LMS Browser Support:

https://documentation.brightspace.com/EN/brightspace/requirements/all/browser_support.htm

Zoom Video Conferencing Tool

https://inside.tamuc.edu/campuslife/CampusServices/CITESupportCenter/Zoom_Account.aspx?source=universalmenu

ACCESS AND NAVIGATION

You will need your campus-wide ID (CWID) and password to log into the course. If you do not know your CWID or have forgotten your password, contact the Center for IT Excellence (CITE) at 903.468.6000 or helpdesk@etamu.edu.

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Note: Personal computer and internet connection problems do not excuse the requirement to complete all course work in a timely and satisfactory manner. Each student needs to have a backup method to deal with these inevitable problems. These methods might include the availability of a backup PC at home or work, the temporary use of a computer at a friend's home, the local library, office service companies, Starbucks, a ETAMU campus open computer lab, etc.

CWID and Password - You will need your campus-wide ID (CWID) and password to log into the course. If you do not know your CWID or have forgotten your password, contact the Center for IT Excellence (CITE) at 903.468.6000 or helpdesk@etamu.edu.

Technology-Related Issues -Personal computer and internet connection problems do not excuse the requirement to complete all course work in a timely and satisfactory manner. Each student needs to have a backup method to deal with these inevitable problems. These methods might include the availability of a backup PC at home or work, the temporary use of a computer at a friend's home, the local library, office service companies, Starbucks, a ETAMU campus open computer lab, etc. If you are having technical difficulty with any part of Brightspace, please contact Brightspace Technical Support at 1-877-325-7778. Other support options can be found here:

<https://community.brightspace.com/support/s/contactsupport>



EAST TEXAS A&M

COURSE AND UNIVERSITY PROCEDURES/POLICIES

Syllabus Change Policy

The syllabus is a guide. Circumstances and events, such as student progress, may make it necessary for the instructor to modify the syllabus during the semester. Any changes made to the syllabus will be announced in advance.

Student Conduct

All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. The [Code of Student Conduct](#) is described in detail online in the [Student Guidebook](#).

Students should also consult the [Rules of Netiquette Webpage](#) for more information regarding how to interact with students in an online forum.

ETAMU Attendance

For more information about the attendance policy, please view the [Attendance Webpage](#) and the [Class Attendance Policy](#)

Academic Integrity

Students at East Texas A&M University are expected to maintain high standards of integrity and honesty in all their scholastic work. For more details and the definition of academic dishonesty see the following procedures:

[Undergraduate Academic Dishonesty University Procedure 13.99.99.R0.03](#)

[Undergraduate Student Academic Dishonesty Form](#)

[Graduate Student Academic Dishonesty University Procedure 13.99.99.R0.10](#)

[Graduate Student Academic Dishonesty Form](#)

Use of Artificial Intelligence

East Texas A&M University acknowledges that there are legitimate uses of Artificial Intelligence, ChatBots, or other software that has the capacity to generate text, or suggest replacements for text beyond individual words, as determined by the instructor of the course.

Any use of such software must be documented. Any undocumented use of such software constitutes an instance of academic dishonesty (plagiarism).

Individual instructors may disallow entirely the use of such software for individual assignments or for the entire course. Students should be aware of such requirements and follow their instructors' guidelines. If no instructions are provided the student should assume that the use of such software is disallowed.

In any case, students are fully responsible for the content of any assignment they submit, regardless of whether they used an AI, in any way. This specifically includes cases in which the AI plagiarized another text or misrepresented sources

Students with Disabilities-- ADA Statement

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact:

Office of Student Disability Resources and Services

East Texas A&M University
Velma K. Waters Library Rm 162
Phone (903) 886-5150 or (903) 886-5835
Fax (903) 468-8148
Email: studentdisabilityservices@etamu.edu
Website: [Office of Student Disability Services](#)

Nondiscrimination Notice

East Texas A&M University will comply in the classroom, and in online courses, with all federal and state laws prohibiting discrimination and related retaliation on the basis of race, color, religion, sex, national origin, disability, age, genetic information, or veteran status. Further, an environment free from discrimination on the basis of sexual orientation, gender identity, or gender expression will be maintained.

Campus Concealed Carry Statement

Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in East Texas A&M University buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and ETAMU Rule 34.06.02.R1, license holders may not carry a concealed handgun in restricted locations.

For a list of locations, please refer to the [Carrying Concealed Handguns On Campus](#) document and/or consult your event organizer.

Pursuant to PC 46.035, the open carrying of handguns is prohibited on all East Texas A&M University campuses. Report violations to the University Police Department at 903-886-5868 or 9-1-1.

East Texas A&M Supports Students' Mental Health – Counseling Services

The Counseling Center at East Texas A&M University, located in the Halladay Building, Room 203, offers counseling services, educational programming, and connection to community resources for students. Students have 24/7 access to the Counseling Center's crisis assessment services by calling 903-886-5145. For more information regarding Counseling Center events and confidential services, please visit <https://www.etamu.edu/counseling-center/>

Mental Health and Well-Being

The university aims to provide students with essential knowledge and tools to understand and support mental health. As part of our commitment to your well-being, we offer access to Telus Health, a service available 24/7/365 via chat, phone, or webinar.