



ENGR 110: Introduction to Engineering & Technology
Section 01E, Course Syllabus, Spring 2024
Rev 0, 12/17/2023

INSTRUCTOR INFORMATION

| | |
|--|--|
| Instructor | Gerald L. Fudge, PhD |
| Office Location | AG/ET 217 |
| Office Hours | Wednesday (1:00 pm – 4:30 pm) Tuesday (3:00 pm – 4:30 pm) |
| Phone | Office: 903-468-8122 |
| Office Fax | 903-886-5960 (Inform instructor when fax is sent) |
| University Email Address | Gerald.Fudge@tamuc.edu |
| Preferred Form of Communication | Email or mobile |
| Communication Response Time | Typically, within 48 hours on weekdays for email |

COURSE INFORMATION

| | |
|--|---|
| Class Meeting Schedule | See schedule at end of syllabus |
| Class Meeting Dates | Tuesday / Thursday 9:30 am - 10:45 am |
| 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 |

The syllabus/schedule are subject to change

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 team working 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.

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

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, 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's members
 - Solving engineering problems
 - Effective engineering report writing

COURSE REQUIREMENTS

Minimal Technical Skills Needed

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.

Instructional Methods

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 leader supervision, similar to a real-world engineering environment.

The syllabus/schedule are subject to change

Student Responsibilities or Tips for Success in the Course

- **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 potential grade penalty for unexcused absences for the T/R morning class 2x per week or for the Tuesday afternoon class 1x per week. Coming late to class counts as half of an absence. Students should inform the instructor if they need to miss class. Student should bring a scientific calculator to class to support participation.

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

- **Homework Assignments:** Working through example problems is a critical component to learning. Late work may be penalized, including a grade of zero, unless student has an acceptable excuse proven by a doctor's note or other legal documentation.
- **In-Class Assignments:** In-class assignments will be given to help reinforce the material. Unless otherwise specified, these must be turned in during the class; late submissions are not allowed.
- **Projects:** Students will be expected to work together in team projects, similar to real-world engineering, to design and build a system, and to document via in-class presentation, soft-copy presentation, and engineering report. Peer reviews will be collected for group projects to support group evaluation of team member performance.
- **Assignment Submission:** Students shall submit assignments either in class or in the assigned drop boxes on D2L (directions will be provided in class). If problems are encountered using D2L, then email may be used as a backup with instructor permission.
- **Collaboration:** Students are strongly encouraged to collaborate, but must turn in their own work. Teamwork is an integral aspect of engineering.
- **Soft-Copy Report Formats:** Students should submit reports in Word or PDF (PDF preferred) following the required format in the assignment.
- **Exams:** The exams, unless otherwise noted, will be closed book & closed notes. Student will need to bring a scientific calculator for quizzes and exams. The use of a personal phone is strictly prohibited during exams. A makeup exam may be offered but an official permit for absence that fulfills University procedures must be provided to the instructor in timely manner.
- **Quizzes:** Quizzes will be used to assess problem solving skills and provide student feedback.
- **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 blue tooth and similar devices be worn in the ears during class.
- **Use of Artificial Intelligence (AI) Tools:** Students should use tools such as spelling and grammar checkers, page and section breaks, and format templates. However, other than as directed by the instructor for specific assignments, AI tools, ChatBots, and other software that has the capacity to generate text, or suggest replacements for text beyond individual words is prohibited. Any use of such software must be documented. Any undocumented use of such software constitutes an instance of academic dishonesty (plagiarism).

GRADING

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 |
|--|------------|
| Attendance & Participation (see attendance policy) | 10 |
| Quizzes | 15 |
| Homework | 20 |
| Exams | 25 |
| Projects | 30 |
| Total | 100 |

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

TECHNOLOGY REQUIREMENTS

LMS

All course sections offered by Texas A&M University-Commerce 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

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@tamuc.edu.

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 TAMUC campus open computer lab, etc.

The syllabus/schedule are subject to change

COMMUNICATION AND SUPPORT

If you have any questions or are having difficulties with the course material, please contact your instructor.

Technical Support

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>

Interaction with Instructor Statement

Use email, mobile, and office hours as presented under instructor information.

COURSE AND UNIVERSITY PROCEDURES/POLICIES

Course Specific Procedures/Policies

As described above, student attendance and participation are required for this class.

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.

University Specific Procedures

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 in the [Student Guidebook](#).

<http://www.tamuc.edu/Admissions/oneStopShop/undergraduateAdmissions/studentGuidebook.aspx>

Students should also consult the Rules of Netiquette for more information regarding how to interact with students in an online forum: <https://www.britannica.com/topic/netiquette>

TAMUC Attendance

For more information about the attendance policy please visit the [Attendance](#) webpage and [Procedure 13.99.99.R0.01](#), and

- <http://www.tamuc.edu/admissions/registrar/generalInformation/attendance.aspx>
- <http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/academic/13.99.99.R0.01.pdf>

The syllabus/schedule are subject to change

Academic Integrity

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

- [Undergraduate Academic Dishonesty 13.99.99.R0.03](#)
- [Undergraduate Student Academic Dishonesty Form](#)
- <http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/documents/13.99.99.R0.03UndergraduateStudentAcademicDishonestyForm.pdf>
- [Graduate Student Academic Dishonesty Form](#)
- <http://www.tamuc.edu/academics/graduateschool/faculty/GraduateStudentAcademicDishonestyFormold.pdf>
- <http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/undergraduates/13.99.99.R0.03UndergraduateAcademicDishonesty.pdf>

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

Texas A&M University-Commerce

Velma K. Waters Library Rm 162

Phone (903) 886-5150 or (903) 886-5835

Fax (903) 468-8148

Email: studentdisabilityservices@tamuc.edu

Website: [Office of Student Disability Resources and Services](#)

<http://www.tamuc.edu/campusLife/campusServices/studentDisabilityResourcesAndServices/>

The Counseling Center at A&M-Commerce, 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 www.tamuc.edu/counsel

Nondiscrimination Notice

Texas A&M University-Commerce 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 Texas A&M University-Commerce 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 A&M-Commerce 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. Web url:

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/34SafetyOfEmployeesAndStudents/34.06.02.R1.pdf>

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

AI use policy [Draft 2, May 25, 2023]

Texas A&M University-Commerce 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.

COURSE OUTLINE / CALENDAR

| Week | Days | | Unit / Topic | Notes |
|------|-------|-------|--|------------------------|
| | Tues. | Thur. | | |
| 1 | | 1/11 | W1: Course overview; lab safety; volume; | Safety quiz |
| 2 | 1/16 | 1/18 | W2: Introductions; Teams; Unit Conversions | |
| 3 | 1/23 | 1/25 | W3: Calculations, bridge design; SI units, SI prefixes | Census day 1/26 |
| 4 | 1/30 | 2/1 | W4: Reports, resumes, more unit conversion | |
| 5 | 2/6 | 2/8 | W5: Trig, force, friction on ramp, bridge software | |
| 6 | 2/13 | 2/15 | W6: Energy, work, power; MacArthur Maze, Tacoma | |
| 7 | 2/20 | 2/22 | W7: Review -> Exam 1 | Exam 1 |
| 8 | 2/27 | 2/29 | W8: Balsa wood bridge build in-class project | |
| 9 | 3/5 | 3/7 | W9: Complex numbers, ethics | |
| 10 | 3/12 | 3/14 | W10: Spring Break, no class | |
| 11 | 3/19 | 3/21 | W11: Probability & statistics; material properties | |
| 12 | 3/26 | 3/28 | W12: Mechanical advantage, Mouse Trap Car | Start projects |
| 13 | 4/2 | 4/4 | W13: Review for exam 2; team project time | |
| 14 | 4/9 | 4/11 | W14: Exam 2 | |
| 15 | 4/16 | 4/18 | W15: Special topics; project time | |
| 16 | 4/23 | 4/25 | W16: Engineering Disasters, project time | |
| 17 | 4/30 | 5/2 | W17: Presentations & Competition | Projects 4/30! |
| | | | Finals Week, extra credit projects | |

Notes:

1. Quizzes will be held at various times throughout the semester
2. Specific dates are subject to change