

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



ENGR 110.01E: Introduction to Engineering & Technology

Section 02E: Course Syllabus, Fall 2021

INSTRUCTOR INFORMATION

Instructor	Gerald L. Fudge, PhD
Office Location	AG/ET 216
Office Hours	Wednesday (1:00 pm – 4:30 pm) Tuesday (3:00 pm – 4:30 pm)
Office Phone	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
Communication Response Time	Typically, within 48 hours on weekdays for email

COURSE INFORMATION

Class Meeting Schedule	Meets 1/12/2022 through 5/13/2022
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 https://products.office.com/en-US/
Optional Texts and/or Materials	Engineering Fundamentals – An Introduction to Engineering, Saeed Moaveni, 5 th Edition

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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: MATH 142, or concurrent enrollment.

Student Learning Outcomes

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

Knowledge:

- Understand key engineering principles and the engineering design process.
- Recognize engineering disciplines, and professional & ethical responsibilities.
- Acquire knowledge on mathematical, chemical, and physical laws and related principles that students will practice during the coming years.
- Know basic quantities such as length, time, mass, force, temperature, mole, and electric current and their related variables.
- Acquire knowledge on engineering computational tools to record, organize, analyze data.
- Understand basic characteristics of materials such as metals, plastics, glass, and concrete.
- Know how to apply mathematics to model and investigate engineering problems.
- Know how to use 3D printers for rapid prototyping of engineering solutions.

Cognitive Skills

- Be able to diagram, analyze and interpret engineering problems.
- Be able to select and justify appropriate engineering techniques and necessary tools for solving problems.
- Be able to verify and validate engineering designs or products.
- Understand the fundamentals of teamwork, and effective communication skills.

Interpersonal Skills & Responsibility

- Demonstrate the capacity to function in multi-disciplinary teams:
- Teamwork to solve assignments.
- Team interaction on engineering project.

Communication, Information Technology, Numerical

- Demonstrate effective oral and written communication skills through:
 - Team discussions.
 - Class participation.
 - Effective communication among team's members.
 - Solving exam problems.
 - Effective report writing.
- Operate modern IT tools, including software and numerical techniques, to enhance team work and communication skills:

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- Use IT tools and numerical techniques to solve assignments.
- Use IT tools and software to work on projects.
- Practice numerical techniques to answer exam questions.

COURSE REQUIREMENTS

Minimal Technical Skills Needed

Prerequisites: MATH 142, or concurrent enrollment. 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

This course is an enhanced course. This means course materials and lecture notes will be provided via a course website. All announcements will be posted on the course website as well. Assignments will be asked to be submitted in class or on the course website. Students' grades for assignments and exams will be indicated on the submitted papers if available and on the course website.

The teaching methods in this course include lectures, class discussion, teamwork, projects, technical report writing, presentations, homework assignments, problem solving, case study, and using engineering software to support modeling / analysis / simulation of engineering systems.

- **Exams:** The two exams will be closed book & closed notes. Relevant scientific formulas will be provided if needed in supplementary sheet. The use of personal phone is strictly prohibited during exams. Student will need to bring a scientific calculator for quizzes and exams. 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.
- **Teamwork:** The two projects will be worked in groups (teams) and the corresponding results of a team's effort will be submitted in a report with presentation charts for evaluation, in addition to a live in-class prototype demonstration and individual peer reviews. Teams will be formed early in the semester and will remain constant for both projects.
- **Homework:** Homework will be assigned most weeks to reinforce learning. Homework can be collaborative, but the actual submission must be the student's own work.
- **Group Projects:** There will be 2 group projects prior to the Final Project. For each project, each team will be provided with a technical problem. The team will need to apply the 8-step engineering process to properly assess, design and manufacture an engineering solution for the problem. Students in each team can freely work together but be independent of other teams. Each team will have to submit a report that describes and analyzes the project and the main findings. Each team will also prepare a PowerPoint presentation documenting the solution and will present the presentation in class.
- **Final Project:** The final project will be an individual research project focusing on technical report writing skills. The final report will be a 3-10 page single-spaced college-level technical report with Abstract, Introduction, main body paragraphs, and Conclusion (in addition to References in APA or MLA format).
- **Extra Credit:** Opportunities for extra credit may be offered during the semester in the form of

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bonus quizzes, competitions, or to honor productive student's contributions.

Student Responsibilities or Tips for Success in the Course

Attendance:

Attendance is a requirement for this course. If the student is ill, the student should not attend and should let the instructor know as soon as possible to support coordination and excused absence from lectures/labs. Attendance is identified as physical presence in face-to-face lectures/labs, active involvement in online live classes, and/or active/timely responses to activities identified during live and/or recorded lectures/labs. The instructor will register attendance with each class. Note that poor attendance can also impact the participation grade since participation requires attendance. Class Attendance Requirement (one lateness = 1/2 absence):

# of Absences	0-2	3-4	5-6	7-8	>8	
Total Grade Penalty	0%	5%	10%	15%	F	

Submission of Assignments:

Assignment files will be placed in the assigned drop boxes on D2L in the accepted formats only (identified above).

Late work is not accepted, unless student has an acceptable excuse proven by a doctor's note or any legal documentation.

Soft-Copy Assignment Formats:

Unless directed and/or approved by the instructor, only MS Office-compatible formats (.doc, .docx, .rtf, .xls, .xlsx, .ppt, .pptx, and pdf) will be accepted for assignments and submissions. Other specific formats may be dictated based on assignment and will be coordinated with/by the instructor prior to submission to assignment drop boxes. **Failure to comply with required document formats can result in late or rejected assignments (zero credit).**

Students should use MS Office and other available tools to improve their work, such as spelling and grammar checkers, page and section breaks, and APA templates. This is highly encouraged PRIOR to submission of assignments.

Success Guidelines:

To be successful in this class, the student will need to:

- Attend all classes
- Arrive for class on time (late arrival will count as an absence)
- Actively participate in class work and discussions
- Regularly log into the D2L course website to monitor grades, homework assignments, and directions from the instructor.
- Perform research and do the homework to support class learning objectives
- Participate as both an individual and as a team member on projects. Peer reviews will be collected for group projects to support group evaluation of team member performance.
- Prepare and provide presentations for research and/or projects
- Be proficient in the use of a scientific calculator to perform analysis and problem solving in the assignments, quizzes, and exams.
- Grammar and spell check all assignments PRIOR to submission!

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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

The grades will be a weighted average with the following weights based on assessment type:

Assessment Type	Percent
Participation (see attendance policy)	10
Homework	20
Quizzes	10
Exams (2 exams)	20
Presentations & Projects Project 1, 12% Project 2, 12 % Project 3, 16%	40
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

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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.

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 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](#).

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<http://www.tamuc.edu/admissions/registrar/generalInformation/attendance.aspx>

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/academic/13.99.99.R0.01.pdf>

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/>

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

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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.

Department or Accrediting Agency Required Content

COURSE OUTLINE / CALENDAR

Week	Days	Lecture / Topic	Notes
1	Jan 11 , 13	LW 1: Introduction to TAMU-C Engineering	Jan 13 is 1 st class
2	Jan 18, 20	LW 2: Intro to engineering, Makerspace & safety, Project 1, engineering math	
3	Jan 25, 27	LW 3: Engineering communications, including reports & presentations, engineering math	
4	Feb 1, 3	LW 4: Ethics & Diversity in Engineering	
5	Feb 8, 10	LW 5: Project 1 competition, engineering reports	Prototype Demo
6	Feb 15, 17	LW 6: Project 2, fundamentals of engineering (FE)	
7	Feb 22, 24	LW 7: Engineering communications, FE problems	
8	Mar 1, 3	LW 8: FE Problems, Test 1	Test 1
9	Mar 8, 10	LW 9: FE Problems	
10	Mar 15 , 17		Spring break
11	Mar 22, 24	LW 10: FE Problems	
12	Mar 29, 31	LW 11: Project 2 competition, Excel & MATLAB	Prototype Demo
13	Apr 5, 7	LW 12: Final Project; Excel & MATLAB	
14	Apr 12, 14	LW 13: Excel & MATLAB	
15	Apr 19, 21	LW 14: MATLAB & FE	
16	Apr 26, 28	LW 15: MATLAB & FE; Test 2	Test 2
17	May 3, 5	Final Project due 3 May	May 4,5,6 study
18	Finals		
Notes: 1. Fundamentals of engineering practice will take place throughout the semester 2. Topic, project, and exam dates are subject to change			

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