

# MECH 1305: Graphics and Design Fundamentals

Spring 2024

## Instructor information

Instructor	Email	Office location & hours
Dr. Francisco Medina	frmedina@utep.edu	Engineering Building A-103 (by appointment only)
Cristian Banuelos	cbanuelos4@miners.utep.edu	Engineering Building E-108 Fridays 10 AM - 1 PM (by appt)
Shadman Tahsin Nabil	snabil@miners.utep.edu	Engineering Building E-108 Fridays 10 AM - 1 PM (by appt)

## General information

### Description

This course provides an overview of fundamental concepts in solid modeling, covers the principles of dimensioning, and introduces the basics of computer-aided engineering (CAE) software (Fusion 360).

### Expectations and goals

Students are expected to attend every class and follow along with in class instruction. Students are also expected to complete quizzes, exams, and projects within the deadlines. At the conclusion of this course students should be able to know the basics of CAD software including sketching, modeling, generating drawings, simulation, and assemblies.

## Course materials

### Required materials

This course is designed around Autodesk Fusion 360. Students are required to bring their laptop with Fusion 360 education version installed and mouse to every class. The following are recommended specifications for the laptop by UTEP engineering:

- PC with i5 processor or better
- 256+ GB storage
- minimum 8GB RAM
- dedicated graphics card
- We recommend a Windows OS as it is more compatible with the software and future programs needed.  
(Note: Fusion 360 is compatible with MacOS)

## Laptop for Students

Please note that the University offers free laptop rental to all registered students on a first-come, first-serve basis. Limited-term laptop checkout available at the Library and Engineering Technology Center (ETC).

## Software

### Autodesk Fusion 360

Complete educational access and download the software here:

[Autodesk Education & Student Access | Autodesk](#)

\*Remember to use UTEP email when registering for instant verification.

## Grading

Your grade for this course will be assessed based on your performance in 4 in-class quizzes (25 pts each), 2 in-class exams (100 points each), and 2 team projects (100 points each).

**Exams (2): 200**

**Quizzes (4): 100**

**Projects (2): 200**

**Total Points: 500**

The content of a quiz could be the materials covered in previous sessions or assigned reading and practice material. There will be no make-up quizzes. Two exams will be given during the semester. Makeup exams will be given only for school-related travel or University Approved Reasons. **Note that these reasons require students to notify the University and instructor no less than 10 days prior to the absence.** To pass this class the student MUST demonstrate proficiency with the concepts and software.

The final grade will be calculated based on the points you have accumulated as follows:

A > 450      450>B>400      400>C>350      350>D>300      300>F

The instructor reserves the right to revise this grading plan. However, students will be informed of any changes during the semester.

## Attendance Policy

Regular attendance is crucial for understanding and succeeding in this course. Active participation in class discussions, activities, and lectures is integral to the learning experience. If a student misses a class without a valid and justified reason, the instructor reserves the right to withhold responses to questions related to the missed material. It is the responsibility of the student to communicate any

unavoidable absences in advance and to make arrangements for obtaining missed information from classmates or other reliable sources.

## Tentative Course Schedule

Week	Topic	Assessments
Week 1: Jan 16 - Jan 22	Introduction	Install Software/Licensing
Week 2: Jan 23 - Jan 29	2D Sketches	
Week 3: Jan 30 - Feb 05	2D Sketches	
Week 4: Feb 06 - Feb 12	3D Modeling	Quiz 1
Week 5: Feb 13 - Feb 19	3D Modeling	
Week 6: Feb 20 - Feb 26	3D Modeling	
Week 7: Feb 27 - Mar 05	Engineering Drawings	Quiz 2
Week 8: Mar 06 - Mar 12	Assemblies	Exam 1
Week 9: Mar 13 - Mar 19	Spring Break (No Classes)	
Week 10: Mar 20 - Mar 26	Assemblies	
Week 11: Mar 27 - Apr 02	Simulation	Quiz 3
Week 12: Apr 03 - Apr 09	Simulation	
Week 13: Apr 10 - Apr 16	Simulation	Quiz 4
Week 14: Apr 17 - Apr 23	Additive Manufacturing	
Week 15: Apr 24 - Apr 30	Project	
Week 16: May 01 - May 07	Project	Dragster Race (Dead Day)
Week 17: May 08 - May 14	Final's Week	Final Exam

## Additional information and resources

### Study Guide

Complete the modules as they are assigned and work on the examples provided on those even if they are not covered in class. This will help you learn the software further and get more practice with it and do better in class. Expect to spend 10 or more after-class hours each week on the subject. Show up to class every class meeting, establish a good studying and practice habit to work out the examples at home and you will do very well in the class.

### Reasonable Accommodation Policy

Any student in this course who has a disability that may prevent him or her from fully demonstrating his or her abilities should contact me personally as soon as possible so we can discuss accommodations necessary to ensure full participation and facilitate the student's educational opportunities.

Web: <http://www.utep.edu/dsso> Phone: (915) 747-5148 voice or TTY Fax: (915) 747-8712

E-Mail: [dss@utep.edu](mailto:dss@utep.edu)

### Quiz and Exam Policy

On the scheduled dates of quizzes and exams, all students must arrive at the session's starting time and be ready to present the assessment. To maintain the integrity of the assessments, students who arrive more than 15 minutes late to the class on those dates will not be allowed to take the assessment and will receive a grade of zero. No exceptions will be made. All students taking an assessment must be present in the classroom. The instructor reserves the right to assess work with an oral explanation of procedure during any Quiz or Exam.

### Policy on Cheating

Students are expected to be above reproach in all-scholastic activities. Students who engage in scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and dismissal from the university. Scholastic dishonesty includes but is not limited to cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student, or the attempt to commit such acts (Regents= Rules and Regulations, Part One, Chapter VI, Section 3, Subsection 3.2, Subdivision 3.22). Scholastic dishonesty harms the individual, all students, and the integrity of the university; policies on scholastic dishonesty will be strictly enforced.