

# MECH 1305: Graphics and Design Fundamentals

Fall 2024

## Instructor information

### Professor

Dr. Francisco Medina

### Email

[frmedina@utep.edu](mailto:frmedina@utep.edu)

### Office location & hours

Engineering Building A-103  
(by appointment only)

### Instructors/TAs

### Email

Cristian Banuelos

[cbanuelos4@miners.utep.edu](mailto:cbanuelos4@miners.utep.edu)

Shadman Tahsin Nabil

[snabil@miners.utep.edu](mailto:snabil@miners.utep.edu)

Erick Molina Castaneda

[egmolinacastan@miners.utep.edu](mailto:egmolinacastan@miners.utep.edu)

Kneph Meneses-Miranda

[kmenesesmi@miners.utep.edu](mailto:kmenesesmi@miners.utep.edu)

Anannya Doris

[adoris@miners.utep.edu](mailto:adoris@miners.utep.edu)

Jesus De Haro

[jfdeharoru@miners.utep.edu](mailto:jfdeharoru@miners.utep.edu)

Luis Muñoz

[lemunoz5@miners.utep.edu](mailto:lemunoz5@miners.utep.edu)

### Instructor/TA Office Hours:

Engineering Building E-101

(by appointment only)

## 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).

### 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 end of this course, students should 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. Students are required to bring their laptop with Fusion 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:

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

<b>Week</b>	<b>Topic</b>	<b>Assessments</b>
Week 1	Introduction	Install Software/Licensing
Week 2	2D Sketches	
Week 3	2D Sketches	
Week 4	3D Modeling	Quiz 1
Week 5	3D Modeling	
Week 6	3D Modeling	
Week 7	Engineering Drawings	Quiz 2
Week 8	Assemblies	Exam 1
Week 9	Assemblies	
Week 10	Simulation	Quiz 3
Week 11	Simulation	
Week 12	Simulation	Quiz 4
Week 13	Additive Manufacturing	
Week 14	Project	
Week 15	Project	Dragster Race (Dead Day)
Week 16	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.

## Final Exam Schedule

### Exams by Meeting Time

Your class meets...	Your final is...	
MWF 7:30 - 8:20 am or MW 7:30 – 8:50	Friday, December 13 <sup>th</sup>	7:00 am – 9:45 am
MWF 8:30 – 9:20 am	Monday, December 9 <sup>th</sup>	10:00 am – 12:45 pm
MWF 9:30 – 10:20 am or MW 9:00 – 10:20 am	Wednesday, December 11 <sup>th</sup>	10:00 am – 12:45 pm
MWF 10:30 – 11:20 am or MW 10:30 – 11:50 am	Friday, December 13 <sup>th</sup>	10:00 am – 12:45 pm
MWF 11:30 am – 12:20 pm	Wednesday, December 11 <sup>th</sup>	1:00 pm – 3:45 pm
MWF 12:30 pm – 1:20 pm or MW 12:00 pm – 1:20 pm	Friday, December 13 <sup>th</sup>	1:00 pm – 3:45 pm
MWF 1:30 – 2:20 pm or MW 1:30 – 2:50 pm	Wednesday, December 11 <sup>th</sup>	4:00 pm – 6:45 pm
MWF 2:30 – 3:20 pm or MW 3:00 – 4:20 pm	Monday, December 9 <sup>th</sup>	1:00 pm – 3:45 pm
MW 4:30 – 5:50 pm	Monday, December 9 <sup>th</sup>	4:00 pm – 6:45 pm
Mondays 4:30 – 7:20 pm	Monday, December 9 <sup>th</sup>	4:00 pm – 6:45 pm
Wednesdays 4:30 – 7:20 pm	Wednesday, December 11 <sup>th</sup>	7:00 pm – 9:45 pm
MW 6:00 - 7:20 pm	Wednesday, December 11 <sup>th</sup>	7:00 pm – 9:45 pm
Mondays 6:00 pm – 8:50 pm	Monday, December 9 <sup>th</sup>	7:00 pm – 9:45 pm
Wednesdays 6:00 pm – 8:50 pm	Wednesday, December 11 <sup>th</sup>	7:00 pm – 9:45 pm
TR 7:30 am – 8:50 am	Thursday, December 12 <sup>th</sup>	7:00 am – 9:45 am
TR 9:00 am – 10:20 am	Tuesday, December 10 <sup>th</sup>	10:00 am – 12:45 pm
TR 10:30 am – 11:50 am	Thursday, December 12 <sup>th</sup>	10:00 am – 12:45 pm

TR 12:00 pm – 1:20 pm	Tuesday, December 10 <sup>th</sup>	1:00 pm – 3:45 pm
TR 1:30 pm – 2:50 pm	Thursday, December 12 <sup>th</sup>	1:00 pm – 3:45 pm
TR 3:00 pm – 4:20 pm	Thursday, December 12 <sup>th</sup>	4:00 pm – 6:45 pm
TR 4:30 pm – 5:50 pm	Tuesday, December 10 <sup>th</sup>	4:00 pm – 6:45 pm
Tuesday 4:30 pm – 7:20 pm	Tuesday, December 10 <sup>th</sup>	4:00 pm – 6:45 pm
Thursday 4:30 pm - 7:20 pm	Thursday, December 12 <sup>th</sup>	7:00 pm – 9:45 pm
TR 6:00 pm – 7:20 pm	Thursday, December 12 <sup>th</sup>	7:00 pm – 9:45 pm
Tuesdays 6:00 pm – 8:50 pm	Tuesday, December 10 <sup>th</sup>	7:00 pm – 9:45 pm
Thursdays 6:00 pm – 8:50 pm	Thursday, December 12 <sup>th</sup>	7:00 pm – 9:45 pm
S 8:00 am, 9:00 am, 10:00 am, 11:00 am, 12 noon, 2:00 pm	Saturday, December 14 <sup>th</sup>	Regularly sched time/location