



**Class Reference Number (CRN):** 35542

**Instructor & TA:** Methaq S. Abed, Ph.D., P.E. & Angel Ortega

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**Office Hours:** Virtual office hours will be offered by appointment. You are welcome anytime to send your questions via email and allow 48 hrs to reply.

**Class Meeting Schedule:** 2:30 -3:35 pm online

**Class Duration:** June 8<sup>th</sup>, 2020 - July 31<sup>st</sup>, 2020

**Course Description:** An introduction to solid modeling concepts and software, dimensioning, and basic computer-aided engineering.

### Course Objective:

At the end of this class, the typical students should be well prepared to make drawing for any type of structures, machines, and any connection elements. The students will be able to sketch models that can be used for 3D print. Besides, the students will be able to run a simulation for their models to check the analysis required for design purposes.

**Course Content**

- 2D Sketching
- 3D Modeling
- Drafting
- Parts Assembly
- Simulation (stress/thermal)
- Rendering and animation
- CAM and 3D Printing
- Design Projects

**Course Requirements** Computer capable of running Autodesk's Fusion 360. Limited-term laptop checkout is available at the Library and Engineering Technology Center. Desktops at Library may be used to complete assignments, but Laptops will be required for Exams and Quizzes.

**Software** Autodesk Fusion 360

**Available at** Fusion 360 | Free Software for Students and Educators | <https://www.autodesk.com/products/fusion-360/students-teachers-educators>

**Grading**

Homework (7) 700

Projects (2) 300

Total Points 1000

**Grading Scale:**

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

A &gt; 850

850 &gt; B &gt; 750

750 &gt; C &gt; 650

650 &gt; D &gt; 550

550 &gt; F

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

**Homework:** The description for each homework assignments will be posted on the blackboard, and due date for each assignment will be on Sunday at 11:59 pm.

**Projects:** There will be one individual and one team project in this course. Both projects will challenge you to apply the material covered in class and force you to apply knowledge from outside the class to complete. Project 1 (team effort) will cover all the fundamentals of modeling and will include a functional assembly. Project 2 (individual effort) will cover modeling and simulation fundamentals that will be applied to a real-life problem.

**Homework and Projects' Policy**

*To pass this class, the student MUST demonstrate proficiency with the concepts and software. If a student misses half of the assigned homework and one project, the instructor has the right to drop him/her from class or assign an "F" grade for the class.*

**Drop/Withdrawal Deadline: July 10<sup>th</sup>, 2020.**

**Attendance:**

Since this class is offered online, the attendance will be calculated differently. If you do not submit 2 of the weekly modules on time, that will be seen as missing 2 full weeks of class; the instructor has the right to drop you from the course.



## Technology Requirements

Course content is delivered via the Internet through the Blackboard learning management system (LMS). Ensure your UTEP email account is working and that you have access to the Web. You may use any of the primary Web browsers—Explorer, Google Chrome, Firefox, Safari, etc. When having technical difficulties, try switching to another browser.

You will need to have or have access to a computer/laptop, printer, scanner, a webcam, and a microphone. You will need to purchase a USB (flash drive). You will need to download or update the following software: Microsoft Office, Adobe, Flashplayer, Windows Media Player, QuickTime, and Java. Check that your computer hardware and software are up-to-date and able to access all parts of the course. If you encounter technical difficulties of any kind, contact the Help Desk.

## Netiquette

- o Always consider the audience. Remember that members of the class and the instructor will be reading any postings.
- o Respect and courtesy must be provided to classmates and to the instructor at all times. No harassment or inappropriate postings will be tolerated.
- o When reacting to someone else's message, address the ideas, not the person. Post only what anyone would comfortably state in a F2F situation.
- o Blackboard is not a public internet venue; all postings to it should be considered private and confidential. Whatever is posted on in these online spaces is intended for classmates and professors only. Please do not copy documents and paste them to a publicly accessible website, blog, or other space. If students wish to do so, they have the ethical obligation to first request the permission of the writer(s).

## Drop Policy

To drop this class, please contact the [Registrar's Office](#) to initiate the drop process. If you cannot complete this course for whatever reason, please contact me. If you do not, you are at risk of receiving an "F" for the course.

## Accommodations Policy

The University is committed to providing reasonable accommodations and auxiliary services to students, staff, faculty, job applicants, applicants for admissions, and other beneficiaries of University programs, services and activities with documented disabilities in order to provide them with equal opportunities to participate in programs, services, and activities in compliance with sections 503 and 504 of the Rehabilitation Act of 1973, as amended, and the Americans with Disabilities Act (ADA) of 1990 and the Americans with Disabilities Act Amendments Act (ADAAA) of 2008. Reasonable accommodations will be made unless it is determined that doing so would cause undue hardship on the University. Students requesting accommodation based on a disability must register with the [UTEP Center for Accommodations and Support Services](#).



## Scholastic Integrity

Academic dishonesty is prohibited and is considered a violation of the UTEP Handbook of Operating Procedures. It includes, but is not limited to, cheating, plagiarism, and collusion. Cheating may involve copying from or providing information to another student, possessing unauthorized materials during a test, or falsifying research data on laboratory reports. Plagiarism occurs when someone intentionally or knowingly represents the words or ideas of another as one's own. Collusion involves collaborating with another person to commit any academically dishonest act. Any act of academic dishonesty attempted by a UTEP student is unacceptable and will not be tolerated. All suspected violations of academic integrity at The University of Texas at El Paso must be reported to the [Office of Student Conduct and Conflict Resolution \(OSCCR\)](#) for possible disciplinary action. To learn more [HOOP: Student Conduct and Discipline](#).

## Student Resources

UTEP provides a variety of student services and support:

**UTEP Library:** Access a wide range of resources, including online, full-text access to thousands of journals and eBooks plus reference service and librarian assistance for enrolled students.

**Help Desk:** Students experiencing technological challenges (email, Blackboard, software, etc.) can submit a ticket to the UTEP Helpdesk for assistance. Contact the Helpdesk via phone, email, chat, website, or in-person if on campus.

**University Writing Center (UWC):** Submit papers here for assistance with writing style and formatting, ask a tutor for help and explore other writing resources.

**Math Tutoring Center (MaRCS):** Ask a tutor for help and explore other available math resources.

**History Tutoring Center (HTC):** Receive assistance with writing history papers, get help from a tutor, and explore other history resources.

**Military Student Success Center:** UTEP welcomes military-affiliated students to its degree programs, and the Military Student Success Center and its dedicated staff (many of whom are veterans and students themselves) are here to help personnel in any branch of service to reach their educational goals.

**RefWorks:** A bibliographic citation tool; check out the RefWorks tutorial and Fact Sheet and Quick-Start Guide.

## ACES & Tutoring Center

Please note there are tutoring services available in the ACES center. Tutoring is free to you; the Department pays them. If tutors are not used, the Department may stop funding them. Check the schedule of the tutors and make use of the services. For more details, visit the

**ME Advising Blackboard -> cc mech acadav: MECH Academic Advising -> Tutoring & Resources**



At the link, you can find tutor schedules, location of the ACES center, and the list of tutors available. For more information, send email to [METutors@utep.edu](mailto:METutors@utep.edu)

### Harassment Policy

The Department has a zero-tolerance policy for harassment. Engagement in any behavior considered harassment will be reported to the proper authorities. In addition to generally understood forms of harassment, the Department also treats the following behavior as harassment:

- Repeated emails and/or calls regarding subjects that have already been addressed. Once a decision has been made or a question answered, a student who continues to ask the same question will be given a warning by the recipient of the email/call. If the student continues, the behavior will be reported. Questions that seek understanding of course material are not harassment, but repeated questions about a grade or an administrative decision are.
- Grades are NOT negotiable, ever. If you believe a grading mistake has been made, you must follow the process described in the UTEP catalog. Any request for a grade elevation that is NOT based on a mistake is considered harassment and will be reported immediately.

### Tentative Class Schedule:

Week	Topics	Assessments
1	Introduction, Teaming & Projects	
	2D Sketches – Dimensioning	H.W. #1 due on Sunday, June 14 <sup>th</sup> , at 11:59 pm.
2	2D Sketches – Constraining	
	Fully Constraining a Sketch	H.W. #2 due on Sunday, June 21 <sup>st</sup> , at 11:59 pm.
3	3D Modeling - Extrude & Sweep	
	3D Modeling – Revolve & Modify	H.W. #3 due on Sunday, June 28 <sup>th</sup> , at 11:59 pm.
4	Drafting	
	Assemblies	H.W. # 4 on Sunday, July 5 <sup>th</sup> , at 11:59 pm.
5	Assemblies	H.W. # 5 on Sunday, July 12 <sup>th</sup> , at 11:59 pm.
6	CAM & 3D Printing	
	Simulation	H.W. # 6 on Sunday, July 12 <sup>th</sup> , at 11:59 pm.



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7	Simulation & Generative Design/Topology Optimization	
	Generative Design/Topology Optimization	
	Rendering & Animation	H.W. # 7 on Sunday, July 19 <sup>th</sup> , at 11:59 pm.
8	Design Project	Due date on Monday, July 27 <sup>th</sup> at 11:59 pm
	Design Project	Due date on Wednesday, July 29 <sup>th</sup> at 11:59 pm

**The above schedule, policies, and assignments in this course are subject to change in the event of extenuating circumstances or by mutual agreement between the instructor and the students.**