MENG 1301 – Engineering Graphics and Design
Course Syllabus

Semester / Year	Fall 2024
Catalog Description	An introduction to CAD-based engineering design graphics, including spatial visualization, projection theory, and parametric, feature-based solid modeling techniques. The course focuses on skill development through project-oriented and experiential learning activities in a team-based environment conducting mechanical engineering design.
Prerequisites	None
Section Number	001 Lecture, 001 Lab, 002 Lab, 003 Lab
Instructor Name	Dr. Chung Hyun Goh
Contact Info	Office: RBN 3007, Phone: 903-565-6615, cgoh@uttyler.edu
Class Type / Location	Face-To-Face / RBN 3035 for lectures; Labs: RBN 3035 for 001L, RBN 4019 for Lab 002L, and RBN 4032 for Lab 003L.
Class Time	• Lecture: Tu and Th 08:00 am – 08:55 pm • Lab-1 (001L): Tu 02:00 pm – 04:45 pm • Lab-2 (002L): We 05:00 pm – 07:45 pm • Lab-3 (003L): Th 02:00 pm – 04:45 pm
Office Hours	Tu 9:00 am – 10:30 am / W 3:00 pm – 4:30 pm or by appointment
Credits	3 credits
Required Textbook & Resources	• Students taking courses in Mechanical Engineering (ME) are expected to have a laptop at their disposal. For more details, refer to the Student Laptop Policy at the Department of Mechanical Engineering https://uttyler.smartcatalogiq.com/en/2022-2023/Catalog/College-of-Engineering • SOLIDWORKS Student Edition https://www.solidworks.com/product/students
Optional References	• James D. Bethune & Nathan Brown, Engineering Design and Graphics with SolidWorks 2023, Pearson. • David C. Planchard CSWP, Engineering Graphics with SOLIDWORKS 2022 A Step-by-Step Project Based Approach. SDC Publications. • David C. Planchard CSWP, Engineering Design with SOLIDWORKS 2022 A Step-by-Step Project Based Approach. SDC Publications. • Paul Kurowski, Engineering Analysis with SOLIDWORKS Simulation 2022. SDC Publications.
Additional Requirements	AI tools are allowed to support students' learning and productivity, provided that their use aligns with academic integrity standards. When required, students must disclose their use of AI.

Evaluation Method	Final course grades will be based on: Homework Assignments / Quizzes 30% Class work and participation 10% Project 1 (Water Rocket Competition) 10% Project 2 50% Total 100% Project 2 breakdown: • Project2 Idea & plan: 2% • Project2 Drawing files: 20% • Project2 Video:10% • Project2 Follow-up Presentation: 3% • Project2 Final Presentation: 5% • Project2 Prototype: 10% • Individual project grades are calculated from the team project grade and peer evaluations. **Scale:** A: 90 - 100, B: 80 – 89, C: 70-79, D: 60 – 69, F: <60
Grading Policy / Scale	Letter grades
Important Events / Dates	Census date: 09/09/2024 First drop for non-payment: 09/03/2024 Second drop for non-payment: 09/18/2024 Last date to withdraw from one or more 15-week courses: 11/04/2024 Final date: No final exam.
Attendance / Makeup Policy	Regular attendance is imperative if you want to do well in this course. Therefore, any student who incurs **three unexcused LAB** absences and/or **six unexcused Lecture** absents or more during the 15-week semester will result in an instant F grade for the course. In case you have to miss a class, it is your responsibility to keep up with the class work and be informed of all announcements made in the class on homework, tests etc. No makeup **Homework Assignments:** Homework will be assigned according to the topics covered in lectures. Assignments are considered very important for the understanding of the course material. Completing your homework independently is an absolute necessity to do well in this course. All homework assignments are due in one week and no late work will be accepted.
Course Learning Objectives / ABET & PEOs Relation	By the end of this course, students will be able to: 1. Have the basic skills needed to interpret and create engineering drawings following the standard conventions of engineering graphical communication. 2. Generate multi-view and pictorial sketches to aid in the ideation phase of the design process. 3. Generate working 3D assemblies of mechanical systems. 4. Use sketches and CAD software as an integral tool in the design process and be able to persuasively evaluate and communicate the design. 5. Design and build a mechanical system prototype.

Tentative Topics / Course Plans	- Introduction to SolidWorks – Getting Started - Parametric Modeling Fundamentals - Pictorials and Sketching - Fundamentals of drawing - Orthographic Projection and Multiview Constructions - CSG Concepts and Model History Tree - Geometric Dimensioning - Tolerancing and Annotation - Threads and Fasteners - Gears and Bearings - Introduction to 3D printing - Assembly Modeling and Motion Analysis
University Policies	https://www.uttyler.edu/offices/academic-affairs/files/syllabus-information.pdf