

## Master Course Syllabus

For additional course information, including prerequisites, corequisites, and course fees, please refer to the Catalog: <https://catalog.uvu.edu/>

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**Semester:** Spring

**Course Prefix:** ENGR

**Course Title:** Introduction to Engineering

**Year:** 2025

**Course and Section #:** 1000-003

**Credits:** 3

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### *Course Description*

Introduces engineering-problem-solving techniques, design processes, modelling of simple engineering systems using CAD, and systems analysis in Excel. Emphasizes engineering design procedures by incorporating group projects and presentations.

### *Course Attributes*

This course has the following attributes:

- General Education Requirements
- Global/Intercultural Graduation Requirements
- Writing Enriched Graduation Requirements
- Discipline Core Requirements in Program
- Elective Core Requirements in Program
- Open Elective

Other: *Click here to enter text.*

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### *Instructor Information*

**Instructor Name:** Mohamed Shwani, Ph.D.

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### *Student Learning Outcomes*

- Apply the engineering design process.
  - Employ principles of effective teamwork.
  - Communicate effectively through written reports and oral presentations.
  - Use Computer Aided Design (CAD) software to create basic engineering models and/or drawings.
  - Apply modern software tools for engineering analysis and programming.
  - Fabricate prototypes safely using power and hand tools.
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### *Course Materials and Texts*

- Handouts
- Lab
- Calculator

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## ***Course Requirements***

### **Course Assignments, Assessments, and Grading Policy**

- 1- Homework:** There will be several homework assignments throughout the semester which will give you the chance to further explore the things we talk about in class. These assignments account for a large percentage of your grade so missing just one has a big impact on your final grade.
- 2- Assessments:** The main assessments for this course will be through reports and presentations. You will write a final report for the course, but you will write it in parts over the course of the semester. You will receive feedback on each section you turn in and have the opportunity to make revisions and incorporate the feedback into your final report. Presentations will be given as a team.

Final grades are rounded to the nearest tenth and assigned the corresponding letter grade:

A = 93-100	B - = 80-82.9	D+ = 67-69.9
A - = 90-92.9	C+ = 77-79.9	D = 63-66.9
B+ = 87-89.9	C = 73-76.9	D - = 60-62.9
B = 83-86.9	C - = 70-72.9	F = 0-59.9

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### **Required or Recommended Reading Assignments**

None

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### **General Description of the Subject Matter of Each Lecture or Discussion**

Module 1: Canvas tour, Try out OneNote, Introduce yourself, Start your Design Notebook, CATME Survey.

Module 2: Discuss Design Process, Submit Team Contract.

Module 3: Identify 3 Problems, Paragraph Writing, Project Solution Statement.

Module 4: Discuss Problem Research, Design Requirements Table.

Module 5: Excel Basics, Writing Center Visit 1, Project Report 1.

Module 6: Create a Morph Chart, Writing Tone, 5 Concept Sketches, CATME: Early Peer Evaluation.

Module 7: Discuss Scoring Matrix, Submit Scoring Matrix.

Module 8: Concept Presentation, Appendix, Orthographic Projection.

Module 9: Discuss Project Modeling, Introduction to SolidWorks, Writing Center Visit 2, Project Report 2.

Module 10 : Marshmallow Challenge, Machine Shop Safety Quiz, CAD Drafting, Machine Shop Object Project Prototype.

Module 11: Discuss Experiment or Analysis, Experiment or Analysis Proposal, CAD: More cool features and tools

Module 12: Writing an Abstract, Writing Center Visit 3, Project Report 3.

Module 13: Types of Engineering, Engineering Ethics, Presentation Outline.

Module 14: Final Presentation, Final Peer Evaluation, Final Project Report

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## ***Required Course Syllabus Statements***

### **Generative AI**

AI programs are not a replacement for your human creativity, originality, and critical thinking. Writing, thinking, and researching are crafts that you must develop over time to develop your own individual voice. At the same time, you should learn how to use AI and in what instances AI can be helpful to you. The use of generative AI tools (e.g. ChatGPT, Google Bard, etc.) is permitted in this course for the following activities:

- Brainstorming and refining your ideas.
- Fine tuning your research questions.
- Finding information on your topic.
- Drafting an outline to organize your thoughts.
- Checking grammar and style.

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### **Using Remote Testing Software**

This course does not use remote testing software.

This course uses remote testing software. Remote test-takers may choose their remote testing locations. Please note, however, that the testing software used for this may conduct a brief scan of remote test-takers' immediate surroundings, may require use of a webcam while taking an exam, may require the microphone be on while taking an exam, or may require other practices to confirm academic honesty. Test-takers therefore shall have no expectation of privacy in their test-taking location during, or immediately preceding, remote testing. If a student strongly objects to using test-taking software, the student should contact the instructor at the beginning of the semester to determine whether alternative testing arrangements are feasible. Alternatives are not guaranteed.

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## ***Required University Syllabus Statements***

### **Accommodations/Students with Disabilities**

Students needing accommodations due to a permanent or temporary disability, pregnancy or pregnancy-related conditions may contact UVU [Accessibility Services](#) at [accessibilityservices@uvu.edu](mailto:accessibilityservices@uvu.edu) or 801-863-8747.

Accessibility Services is located on the Orem Campus in BA 110.

Deaf/Hard of Hearing students requesting ASL interpreters or transcribers can contact Accessibility Services to set up accommodations. Deaf/Hard of Hearing services can be contacted at [DHHservices@uvu.edu](mailto:DHHservices@uvu.edu)

DHH is located on the Orem Campus in BA 112.

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### **Academic Integrity**

At Utah Valley University, faculty and students operate in an atmosphere of mutual trust. Maintaining an atmosphere of academic integrity allows for free exchange of ideas and enables all members of the community to achieve their highest potential. Our goal is to foster an intellectual atmosphere that produces scholars of integrity and imaginative thought. In all academic work, the ideas and contributions of others must be appropriately acknowledged and UVU students are expected to produce their own original academic work.

Faculty and students share the responsibility of ensuring the honesty and fairness of the intellectual environment at UVU. Students have a responsibility to promote academic integrity at the university by not participating in or facilitating others' participation in any act of academic dishonesty. As members of the academic community, students must become familiar with their [rights and responsibilities](#). In each course, they are responsible for knowing the requirements and restrictions regarding research and writing, assessments, collaborative work, the use of study aids, the appropriateness of assistance, and other issues. Likewise, instructors are responsible to clearly state expectations and model best practices.

Further information on what constitutes academic dishonesty is detailed in [UVU Policy 541: Student Code of Conduct](#).

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### **Equity and Title IX**

Utah Valley University does not discriminate on the basis of race, color, religion, national origin, sex, sexual orientation, gender identity, gender expression, age (40 and over), disability, veteran status, pregnancy, childbirth, or pregnancy-related conditions, citizenship, genetic information, or other basis protected by applicable law, including Title IX and 34 C.F.R. Part 106, in employment, treatment, admission, access to educational programs and activities, or other University benefits or services. Inquiries about nondiscrimination at UVU may be directed to the U.S. Department of Education's Office for Civil Rights or UVU's Title IX Coordinator at 801-863-7999 – [TitleIX@uvu.edu](mailto:TitleIX@uvu.edu) – 800 W University Pkwy, Orem, 84058, Suite BA 203.

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### **Religious Accommodation**

UVU values and acknowledges the array of worldviews, faiths, and religions represented in our student body, and as such provides supportive accommodations for students. Religious belief or conscience broadly includes religious, non-religious, theistic, or non-theistic moral or ethical beliefs as well as participation in religious holidays, observances, or activities. Accommodations may include scheduling or due-date modifications or make-up assignments for missed class work.

To seek a religious accommodation, a student must provide written notice to the instructor and the Director of Accessibility Services at [accessibilityservices@uvu.edu](mailto:accessibilityservices@uvu.edu). If the accommodation relates to a scheduling conflict, the notice should include the date, time, and brief description of the difficulty posed by the conflict. Such requests should be made as soon as the student is aware of the prospective scheduling conflict.

While religious expression is welcome throughout campus, UVU also has a [specially dedicated space](#) for meditation, prayer, reflection, or other forms of religious expression.