
**Philosophy:** This course has been designed to give students background experiences in computer-aided engineering design which has become an essential tool for most companies that design mechanical structures and machines. This course is designed to provide to the student enough background to enable them to competently work with CAD in an entry-level position.

**Course Requirements:** Complete assigned readings and examinations; complete all projects and exercises.

**Methods:** Introduction to engineering design and graphics, including sketching, computer aided drafting, dimensioning, tolerances, multi-view orthographic representations, auxiliary views, section views, and working drawings. Students are required to use CAD in this course. Sketching and CAD techniques should be integrated in this course to achieve the following outcomes:

Several methods should be utilized by the student in meeting the objectives, including the following…

1. Study of the text and other relevant material to gain an appropriate understanding of material.
2. Practice of skills learned by utilizing the lab outside of scheduled class times.
3. Completion of all required assignments, each with specific objectives to be mastered.
4. Attend Instructor lead demonstrations and lectures.
5. Apply design principles rationale in a realistic design project.
6. Communicate the results of the design process, including working drawings, verbal, and written presentations.
7. Demonstrate proficiency in freehand sketching.
8. Demonstrate spatial visualization and reasoning skills (e.g. descriptive geometry or 3D analysis).
10. Create appropriate section view(s) from given orthographic views.
11. Create a properly dimensioned and tolerance multi-view drawing.
12. Create appropriate auxiliary view(s) from given orthographic views.
13. Minimally find true sizes, distances, and angles between points, lines, and planes in three dimensions.

**Attendance:** You will struggle if you do not attend; failure to do so can severely hurt your grade and is easily noticed upon assignment grading. Emergencies are understandable but in no way the norm.

**Materials:** Flash Drive or other media storage
Evaluation Method:

There will be seven exercises receiving a grade; three of the assignments will be graded before Mid-terms. The course schedule will provide a timeline for when exercises should be completed. The exercises consist of the content covered with in the page numbers of the assigned reading.

- **Exercise** 100 points  
  - A = above 900 points
- **Exercise** 100 points  
  - B = 800 to 899 points
- **Exercise** 100 points  
  - C = 700 to 799 points
- **Exercise** 100 points  
  - D = 500 to 699 points
- **Exercise** 100 points  
  - Below 500 points failed
- **Exercise** 100 points
- **Exercise** 100 points
- **Mid Term** 150 points
- **Examination** 150 points

Save all your class assignments/projects. All assignments/projects are due at the assigned time. A penalty of 10% per day for late assignments will be enforced, with a maximum of 50% off.

Exercises:
- All exercises are due at the beginning the class the day that they are due.

Exams: Examination: Exam on techniques presented and discussed during Exercises 1 thru 14.

CAD Lab: Please leave your work areas clean and have consideration for other students at work. Keep talking levels low and show other instructors, or graduate assistants, and fellow students courtesy. Questions can be directed towards these assistants, they are a valuable resource to you.

Special Needs: If a student has a disability that will likely require some accommodation by the instructor, the student must contact the instructor and document the disability through the Disability Services (581-6583 or at the 9th Street Hall), preferably during the first week of course. Any requests for special considerations relating to attendance, pedagogy, taking of examinations, etc. must be discussed with and approved by the instructor.

Remember:
1. All Projects/Examinations submitted must contain all parts, drawings, assemblies and other files created during the project or examination.
2. All Projects/Examination submittals are to be submitted via WEBCT with a .zip file/folder

Syllabus is subject to change at any time by instructor with notification.