EMÜ 104 Computer Aided Technical Drawing

Course Schedule

EMÜ 104 Computer Aided Technical Drawing course for the Spring Semester of the 2025-2026 Academic Year will be given in Derslik 206 in the Department of Industrial Engineering, according to the course schedule announced on the department's website.

Students should attend the class on the day of the lecture they are assigned to.

Students are required to take part in the lectures of this course with a minimum of 80% attendance in accordance with the "Hacettepe University Associate and Undergraduate Education and Teaching Regulation".

Course Evaluation

The assessment of EMÜ 104 Computer Aided Technical Drawing course is as follows:

- 15% Homework

(%)	the title tag	no	preparation type
9	homework 01 homework 02 homework 03 homework 04 homework 05 homework 06	h01 h02 h03 h04 h05 h06	drawing on paper
6	homework 07 homework 08 homework 09 homework 10	h07 h08 h09 h10	using computer with AutoCAD

- 5% Project (using computer with AutoCAD and presentation in the class)
- 40% Midterm Exam
- 40% Final Exam

Necessary Equipment for the Course

Within the scope of this course, the first seven weeks will be hand sketching on paper by technical instruments, and then the last six weeks will be computer aided drawing using AutoCAD software.

The tools and materials required within the scope of the course are as follows:

for technical equipment-based drawing:

- set square in 30/60 degrees and 45/45 degrees
- ruler in 30 cm length
- checkered notebook with at least 80 pages (or it could be two of 40 pages each)
  (it should be large size in A4 norm and the lines on the page should be gray or blue)
- pencil and eraser
- protractor
- hole template
- compass

for computer-based drawing using AutoCAD:

- download the licensed AutoCAD drawing program in your own laptop, at least 2018 version, and bring your computer to the lessons,
  (for licensed installation, you can do student licensing on the Autodesk web page)

About in-class practice within the Course

In-class practice is the drawing work to be done on paper using a checkered notebook and also using computer with AutoCAD software within the scope of the relevant course topics, and can occur more than once in the same lesson depending on the issues.

It is essential to note that in-class practices completed in the clasroom are very important in ensuring that the question examples can be technically drawn both on the drawing paper and the computer screen by “planning-arranging-visualization” and using the relevant drawing tools as an absolute requirement of the universal engineering perspective.

Major Topics and Schedule by Week

01 - Introduction: Meaning of ‘’Technical Drawing’’ and Its Importance

02 - Scaling the sample object (to reduce or to enlarge)

03 - Descriptive Geometry: Coordinate System and Epure Plane for the Projections, 2D and 3D projections

04 - Isometric Perspective & Dimensioning, Orthographic (Orthogonal) Projections (front-top-side views), Fields in Share Displaying Invisible Parts & Uncertain Areas on the aspect of isometric perspective and front-top-side views, Ellipse Drawing

05 - Cutting Plane and Sectioning (in both 3D and 2D manner) & Hatching Process

06 - Design Description, Isometric Perspective & Looking direction for the front view according to the European and American norms

07 - Creative Thinking and Product Realisation Process, Commanding for drawing in AutoCAD and Drawing Objects by Commands

08 – Midterm Exam

09 - Drawing Objects with Icons in AutoCAD

10 - Functionality of icons, Explanation and demonstration of ‘’construction figure, illustration, final image’’

11 - Representing Objects based on the Various Applications

12 - Both Isometric Perspective (3D) & Orthogonal Projections (2D) in AutoCAD

13 - Golden Ratio & Constructing Geometric Figures: Line Segmentation, Ogee Curve, Parabola, Hyperbola, Spiral, Helix

14 - Designing and Modifying different objects

15 – Final Exam