

# EMÜ 102 Computer Aided Technical Drawing

## Course Schedule

EMÜ 102 Computer Aided Technical Drawing course for the Spring Semester of the 2024-2025 Academic Year is given in Derslik 206 in Industrial Engineering Department on Wednesday starts at 13:40 for the branch of 01, and on Friday starts at 09:40 for the branch of 02.

Students should attend classes on the day of the branch 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 102 Computer Aided Technical Drawing course is as follows:

- 3% in-class practice (in terms of participation and practices over the lectures of 14 weeks)
- 20% homework

(%)	title of the set	no	preparation type
5	Phase 1 homework	h01	drawing on paper
	Phase 2 homework	h02	
	Phase 3 homework	h03	
11	homework hockle	h04	drawing on paper & using computer with AutoCAD
	homework exercise	h05	
	homework query	h06	
	homework attempt	h07	
4	homework fancify	h08	drawing on paper and using AutoCAD
	Stage 1 homework	h09	
	Stage 2 homework	h10	

- 7% project

3	project on paper	p01	drawing on paper
4	project using AutoCAD	p02	using computer with AutoCAD

- 30% Midterm Exam
- 40% Final Exam

## Necessary Equipment for the Course

Within the scope of this course, the first six weeks will be hand sketching on paper by technical instruments, and then the last eight 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 120 pages (or it could be two of 60 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 classroom are very important in ensuring that the question examples can be technically drawn in the drawing notebook 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

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- 01 - Introduction: Meaning of “Technical Drawing” and Its Importance, Scaling
  - 02 - Descriptive Geometry: Coordinate System and Epure Plane for the Projections, 2D and 3D projections
  - 03 - Isometric Perspective & Dimensioning, Orthographic (Orthogonal) Projections (front-top-side views), Fields in Share
  - 04 - Displaying Invisible Parts & Uncertain Areas on the aspect of isometric perspective and front-top-side views
  - 05 - Design Description, Isometric Perspective & Looking direction for European and American norms
  - 06 - Cutting Plane and Sectioning (in both 3D and 2D manner) & Hatching Process
  - 07 - Drawing Objects by Commands in AutoCAD
  - 08 - Drawing Objects with Icons in AutoCAD
  - 09 - Functionality of icons, Explanation and demonstration of “construction figure, illustration, final image”
  - 10 - Midterm Exam
  - 11 - Both Isometric Perspective (3D) & Orthogonal Projections (2D) in AutoCAD
  - 12 - Golden Ratio & Constructing Geometric Figures: Ogee Curve, Parabola, Hyperbola, Spiral, Helix
  - 13 - Representing Objects based on the Various Applications
  - 14 - Designing and Modifying different objects
  - 15 - Final Exam
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