

Istanbul Technical University

RES 107 E – Technical Drawing
Spring Term 2018-2019

CRN 15675
1+2 (2 credits - 3 ECTS credits)

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Office Hours Wed 08:30-17:30; Thu 14:00-17:00; Fri 08:30-14:00 (Gumussuyu Campus)

Assistants Adem Candaş (candas@itu.edu.tr)

Course Hours Thursdays 09:30-12:30 (BIL.LAB1 - İTU KMB Building)

Prerequisite None (There is no prerequisite for this course).

Content of the Course Principles of technical drawing in mechanical engineering. Description of line types. Rules of lettering. Dimensioning fundamentals. Geometric construction. Principles of orthographic projection and multi-view drawings. Hidden details and Scales. Sections and sectional views. Half section, local section, revolved section and removed section. Auxiliary views and intersections. Pictorial drawings. Surface texture indication. Engineering fasteners and screw threads. Designation systems for engineering materials. Assembly drawings. Principles of Computer Aided Drawing, Two dimensional Sketching with AutoCAD.

The text books **Engineering design graphics:** AutoCAD 2007, J.H. Earle, Pearson/Prentice Hall, New York, 2008

Recommended Text Books **Engineering Drawing for Technicians - Volume 1**, O. Ostrowsky, English Language Book Society/Edward Arnold, 1987
Technical Drawing 2 – Mechanical Drawing, A. Bankole, S. Bland, Longman, 2002
Engineering Graphics, F.E.Giesecke, *et.al.*, Pearson/Prentice Hall, New Jersey, 2004
Technical Graphics Communication, G.R.Bertoline, *et.al.*, McGraw-Hill, Boston, 2003
Teknik Resim, Temel Bilgiler, İ.Z.Şen, N.Özçilingir, DE-HA Yayımcılık, 2007
Mühendislik Çizimin Esasları, S.Kurt, İ.Gerdemeli, C.E.İmrak, Birsen Yayınevi, İstanbul, 2005
Technical Graphics Communication, G.R.Bertoline, *et.al.*, McGraw-Hill, Boston,2003
Technical Drawing 2 – Mechanical Drawing, A. Bankole, S. Bland, Longman, 2002
Engineering Drawing for Technicians - Volume 1, O. Ostrowsky, English Language Book Society/Edward Arnold, 1987

Objectives of the Course This course of study aims to teach students:

- learning the standard techniques of preparing engineering drawings,
- reading and writing the language of engineering graphics and interpreting drawings,
- solving three-dimensional technical problems that require the application of descriptive geometry and graphical analysis,
- applying dimensioning in 2D multi-view drawings,
- drawing standard mechanical engineering components,
- Sketching 2-dimensional multi-view drawings in AutoCAD.

Learning Outcomes of the Course In successfully completing this course students will be able to

I. make free hand sketches and letter	V. add surface texture symbols to drawings
II. dimension drawings	VI. draw standard mechanical engineering parts
III. draw views of machine components	VII. construct assembly views
IV. draw sectional views of parts	VIII. sketch 2D multi-view drawings in AutoCAD

Assessment

<u>Method</u>	<u>Quantity</u>	<u>Weight</u>
Midterm Exam	2	% 20 - <u>No make-up exam will be given.</u>
Assignment	10	% 20 - <u>No credit will be given for late work or task.</u>
Homework	2	% 10 - <u>Late homework is not evaluated.</u>
Final Exam	1	% 50

WEEKLY COURSE PLAN

Weeks	Subjects	Outcomes
1	Introduction, technical drawing tools and materials, line styles and lettering	I
2	Principles of dimensioning, geometric construction and	II
3	Drawing plate parts	II
4	Orthographic projection and multi-view drawings	II-III
5	Multi-view drawings	II-III
6	Multi-view drawings	II-III
7	Multi-view drawings	II-III
8	Multi-view drawing submit homework 1 – midterm exam 1	IV
9	Sectional views	IV
10	Sectional views	IV
11	Sectional views	IV-VI
12	Pictorial drawings	III
13	<i>Sectional views</i> submit homework 2 – midterm exam2	VI-VII
14	Assembly drawings	VI-VII

NOTES:

1. According to the university regulations, it is compulsory to **ATTEND** at least **70 % of the lectures and 80% of the practices**. Those who do not satisfy this criterion will get a grade of “VF” and will not be allowed to take the final exam. (See: clause 20 of the university regulations).
2. Draw all assignments using drawing tools in the class. You are to stay in the class and work until they are completed and handed in or the class ends. It is up to each student to complete the work. No credit will be given for late work and no make-up assignment will be given. Assignments will be collected within the last five minutes of class. Repeating the assignments is not possible. The drawing must contain an appropriate title block as discussed in class.
3. Submit your homework drawn in the standard drawing paper with the proper title block and also your name and number written. Late homework is not evaluated and no make-up homework will be given Homework should be submitted in due time with complete form. You must use engineer’s drawing paper for all your work. The drawing must contain an appropriate title block as discussed in class.
4. There will be a number of midterm exams and one comprehensive final exam. No make-up exam will be given (a grade of zero will be assigned) except for a verified and written excuse. The instructor should be informed in advance or no later than 48 hours after the exam in case of an emergency. It is the instructor’s discretion to give the make-up exam.
5. **VF** (nonattendance) is the grade given to students who have failed to regularly attend courses or have not fulfilled the requirements of course practices. These requirements are:

- **ATTEND at least 70 % of the lectures and 80% of the practices,**
- **FULFILL at least average grade of 40 in midterm exams,**
- **FULFILL at least average grade of 40 in assignments.**

Evaluation and overall grading scale:

Final grade will be awarded as following. However, the instructor may adjust the scale according to the class performance. The following grading scale is the suggested grading scale.

GRADING SCALE			
AA	91 – 100	CC	56 – 63
BA	85 - 90	DC	50 – 55
BB	71 – 84	DD	46 – 49
CB	64 – 70	FF	< 45

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<http://transport.itu.edu.tr/dersler/lisansdersleri/res107e>