COURSE INFORMATION					
Course Title	*Code*	*Semester*	*T+L Hour*	*Credits*	*ECTS*
ENGINEERING DRAWING	**ES161**	**2**	**1 + 2**	**2**	**5**

Prerequisites	

Language of Instruction	English
Course Level	Bachelor's Degree (First Cycle Programmes)
Course Type	Compulsory
Course Coordinator	Doç.Dr. Mehmet Safa Bodur
Instructors	Doç.Dr. Mehmet Safa Bodur, Prof. Dr. Ömer Savaş
Assistants	
Goals	The aim of this course is to provide students with knowledge and abilities to design a 3D object on 2D paper including all manufacturing constraints by hand sketching method and by means of compueter aided design software.
Content	Teaching of the CAD software used in classroom, basic projection methods used in engineering drawings, multiview projection method types, sectional view, auxilliary views, dimensioning methods,toelrances, paper space layout preparation, 3 D solid modelling system and technical drawing creation by using solid modelling.

Course Learning Outcomes	Program Learning Outcomes	Teaching Methods	Assessment Methods
1) ability to read and understand a 2 D technical drawing from paper	2	1,3,4	A,C,D
2) ability to design a 3D object on 2D paper including all manufacturing constraints by hand sketching method	2,3,4	1,2,3	A,C,D
3) Drawing ability of 2 dimensional and 3 Dimensional solid parts in computer	2,3,4	1,2,3	A,C,D
4) ability to design a part of which geometric and functional constraints are given and then create technical drawings in CAD environment.	6,8	3,4	A,C,D

Teaching Methods:	1: Lecture, 2: Question-Answer, 3: Lab, 4: Case-study
Assessment Methods:	A: Testing, B: Experiment, C: Homework, D: Project

COURSE CONTENT

Week	Topics	Study Materials
1	INTRODUCTION and DESCRIPTION OF THE COURSE	Lecture Notes
2	Introduction to Autocad and Drawing Menu (Line, circle and arc commands and their examples)	Lecture Notes
3	Drawing (rectangle, ellips and polygon) and modify (rease, trim, move, copy) commands in Autocad, Examples	Lecture Notes
4	Modify and Annotation commands in Autocad, Examples	Lecture Notes
5	Modify, annotion and layers commands in Autocad, Examples, EXAM IN COMPUTER	Lecture Notes
6	PROJECTION METHODS EXAM IN COMPUTER	Lecture Notes
7	PROJECTION METHODS EXAM IN COMPUTER	Lecture Notes
8	PROJECTION METHODS EXAM IN COMPUTER	Lecture Notes
9	MISSING VIEW EXAM IN COMPUTER	Lecture Notes
10	MISSING VIEW EXAM IN COMPUTER	Lecture Notes
11	MISSING VIEW EXAM IN COMPUTER	Lecture Notes
12	SECTIONAL VIEW METHODS EXAM IN COMPUTER	Lecture Notes
13	SECTIONAL VIEW METHODS EXAM IN COMPUTER	Lecture Notes
14	SECTIONAL VIEW METHODS EXAM IN COMPUTER	Lecture Notes

RECOMMENDED SOURCES

Textbook	Lecture Notes Engineering Graphics (8th Edition) (Hardcover) by Frederick E Giesecke (Author), Alva Mitchell (Author), Henry C Spencer (Author), Ivan Leroy Hill (Author), John T Dygdon (Author), James E. Novak (Author), R. O. Loving (Author)
Additional Resources	Zeki Şen, Teknik Çizim, Book,2011.

MATERIAL SHARING

Documents	
Assignments	

Exams

ASSESSMENT

IN-TERM STUDIES	NUMBER	PERCENTAGE
Mid-terms	10	80
Assignment	2	20
Lab Work	-	-
Term Project	-	-
Total		**100**
CONTRIBUTION OF FINAL EXAMINATION TO OVERALL GRADE		30
CONTRIBUTION OF IN-TERM STUDIES TO OVERALL GRADE		70
Total		**100**

COURSE CATEGORY	Expertise/Field Courses

COURSE'S CONTRIBUTION TO PROGRAM

No	Program Learning Outcomes	Contribution 1 2 3 4 5
1	Adequate knowledge in mathematics, science and engineering subjects pertaining to the relevant discipline; ability to use theoretical and applied information in these areas to model and solve engineering problems.	
2	Ability to identify, formulate, and solve complex engineering problems; ability to select and apply proper analysis and modeling methods for this purpose.	X (2)
3	Ability to design a complex system, process, device or product under realistic constraints and conditions, in such a way as to meet the desired result; ability to apply modern design methods for this purpose.	X (4)
4	Ability to devise, select, and use modern techniques and tools needed for engineering practice; ability to employ information technologies effectively.	X (4)
5	Ability to design and conduct experiments, gather data, analyze and interpret results for investigating engineering problems.	
6	Ability to work efficiently in intra-disciplinary and multi-disciplinary teams; ability to work individually.	X (4)
7	Ability to communicate effectively both orally and in writing; knowledge of a minimum of one foreign language.	
8	Recognition of the need for lifelong learning; ability to access information, to follow developments in science and technology, and to continue to educate him/herself.	X (4)

9	Awareness of professional and ethical responsibility.
10	Information about business life practices such as project management, risk management, and change management; awareness of entrepreneurship, innovation, and sustainable development.
11	Knowledge about contemporary issues and the global and societal effects of engineering practices on health, environment, and safety; awareness of the legal consequences of engineering solutions.

ECTS ALLOCATED BASED ON STUDENT WORKLOAD BY THE COURSE DESCRIPTION

Activities	Quantity	Duration (Hour)	Total Workload (Hour)
Course Duration (Excluding the exam weeks: 12x Total course hours)	12	3	36
Hours for off-the-classroom study (Pre-study, practice)	14	5	70
Midterm examination	10	1	10
Homework	2	2	4
Project	1	2	2
Final examination	1	3	3
Total Work Load			125
Total Work Load / 25 (h)			5.00
ECTS Credit of the Course			5