Introduction to Mechanical Engineering

Course Code:

ME 101

Course Period:

Autumn

Course Type:

Core

Credits:

2

Theoric:

1

Practice:

0

Laboratory Hour:

2

ECTS:

7

Course Language:

English

Courses given by:

Fethi Okyar [1]
Nezih Topaloğlu [2]
Onur Cem Namlı [3]
Course Objectives:

To equip students with an understanding of what mechanical engineering is and what mechanical engineers do and what the main disciplines in this field are. To let students gain an awareness of ethics, contemporary issues, engineers' responsibilities and some

legal issues related to engineering. To inform students of the University and Faculty rules and regulations.

Course Content:

Orientation, rules and regulations at the University. Introduction to mechanical engineering, its history and related professional organizations. Engineering ethics. Engineering communications. Engineering codes and standards. Problem solving, approximations and uncertainty, comğuting tools. Introduction to engineering design.

Course Methodology:

1: Lecture, 4) Project, 5) Laboratory, 6) Workshop, 10) Guest lecturer

Course Evaluation Methods:

A: Written exam, D: Report, E: Presentation, G: In-class exercise, H: Attendance record

Course Learning Outcomes	Program Learning Outcomes	Teaching Methods	Assessment Methods
1) An adequate understanding of mechanical engineering	1	1	A, H
2) A very basic knowledge of the disciplines in mechanical engineering and what they involve.	1	1	A, H
3) An awareness of engineering ethics.	11	1, 10	A, H
4) An awareness of business world, project management, risk management, entrepreneurship, innovation	12	10	H
5) Knowledge about contemporary issues and the effects of engineering practices on the society; awareness of the some legal consequences of engineering solutions.	13	10	H
6) Ability to conduct a literature survey, prepare a presentation and present it.	9	4,5,6	D, E, G

COURSE CONTENT		
Week	**Topics**	**Study Materials**
1	Reaching knowledge.	Course Notes
2	Contemporary issues in mechanical engineering	Course Notes
3	Word processing using MS Word - 1	Textbook

4	Focus: Bioengineering, Energy	Web
5	Word processing using MS Word - 2	Course Notes
6	Focus: Design, Materials	Web
7	Spreadsheet editing using MS Excel - 1	Course Notes
8	Introduction to freehand sketching	Textbook
9	Spreadsheet editing using MS Excel - 2	Course Notes
10	Engineering drawings and diagrams	Textbook
11	Spreadsheet editing using MS Excel - 3	Course Notes
12	Design of experiments	Course Notes
13	Presentations using MS Powerpoint	Course Notes
14	Group presentations	

RECOMMENDED SOURCES	
Textbook	Dennis K. Lieu; Sheryl A. Sorby, **Visualization, Modeling, and Graphics for Engineering Design** , 2nd Edition, Cengage Learning
Additional Resources	Foundations of Engineering, Holtzapple and Reece

ASSESSMENT		
IN-TERM STUDIES	**NUMBER**	**PERCENTAGE**
Lab performance (Word, Excel, Powerpoint)	3	15
Class performance (2 sketches, 1 essay)	3	15
Lecture Attendance	14	10
Experiment Report	1	10
Presentation	1	10
Final	1	40
Total		**100**
CONTRIBUTION OF FINAL EXAMINATION TO OVERALL GRADE		40
CONTRIBUTION OF IN-TERM STUDIES TO OVERALL GRADE		60

Total		**100**

COURSE'S CONTRIBUTION TO PROGRAM								
No	Program Learning Outcomes		Contribution					
		NA	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 knowledge in these areas in complex engineering problems.	**X**						
2	Ability to identify, formulate, and solve complex engineering problems; ability to select and apply proper analysis and modeling methods for this purpose.	**X**						
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	Ability to devise, select, and use modern techniques and tools needed for analyzing and solving complex problems encountered in engineering practice; ability to employ information technologies effectively.	**X**						
5	Ability to design and conduct experiments, gather data, analyze and interpret results for investigating complex engineering problems or discipline specific research questions.			**X**				
6	Ability to work efficiently in intra-disciplinary and multi-disciplinary teams; ability to work individually.				**X**			
7	Ability to communicate effectively in Turkish, both orally and in writing; knowledge of a minimum of one foreign language; ability to write effective reports and comprehend written reports, prepare design and production reports, make effective presentations, and give and receive clear and intelligible instructions.				**X**			
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**			
9	Consciousness to behave according to ethical principles and professional and ethical responsibility; knowledge on standards used in engineering practice.				**X**			

10	Knowledge about business life practices such as project management, risk management, and change management; awareness in entrepreneurship, innovation; knowledge about sustainable development.				**X**			
11	Knowledge about the global and social effects of engineering practices on health, environment, and safety, and contemporary issues of the century reflected into the field of engineering; awareness of the legal consequences of engineering solutions.				**X**			
12	Ability to work professionally in both thermal and mechanical systems areas, including design and realization.	**X**						
13	Ability to verify and validate numerical solutions to engineering problems.	**X**						

ECTS ALLOCATED BASED ON STUDENT WORKLOAD BY THE COURSE DESCRIPTION			
Activities	Quantity	Hrs per Quantity	Total Workload (Hour)
Course Duration	14	3	42
Off-the-classroom study (pre-study, practice for 14 weeks)	14	6	84
Project	1	35	35
Final examination	1	2	2
Total Work Load			163
Total Work Load / 25 (h)			6.5
ECTS Credit of the Course			7
Prepared by: Fethi OKYAR	**Date** 23/09/2018		
Checked by:			
Department	Mechanical Engineering		