



**ESOGU ELECTRICAL-ELECTRONICS ENGINEERING DEPARTMENT
COURSE INFORMATION FORM**

Course Title	Course Code
INTRODUCTION TO MICROCOMPUTERS	151225405

Semester in Program	Number of Course Hours per Week		ECTS Credit
	Theory	Practice	
5	3	0	5

Course ECTS Credit Distribution				
Basic Sciences	Engineering Sciences	Design	General Education	Social
0	5	0	0	0

Language of Instruction	Course Level	Course Type
English	Undergraduate	Compulsory

Prerequisite	Logic Design
Objectives of the Course	In this class, structure, programming and application of midrange PIC microcontrollers (typically PIC16F877) are given.
Brief Course Content	Fundamental structures in PIC16F877, Modules in PIC16F877, Programming of PIC16F877 by PIC assembly, MPASM

Learning Outcomes of the Course	Contributed POs	Teaching Methods *	Assessment Methods **
1 They can analyze and design microcontroller system for specific purposes.	1c, 2	1	A
2 They can study and understand higher level microcontrollers (for instance 18 series) by themselves.	1c, 2	1	A
3			
4			
5			
6			

*Teaching Methods 1:Lecture, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation
 **Assessment Methods A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	PICmicro Mid-Range MCU Family Reference Manual, Microchip Technology Inc. 1997
Supplementary Resources	(1) Auxiliary tools such as example program and projects, data books, manuals can be found in www.microchip.com web site. (2) MPLAB IDE
Necessary Course Material	None

Course Weekly Schedule	
1	Introduction to mid-range PIC microcontrollers, Oscillators, Reset circuit, Necessary examples related with the subjects
2	Architecture, CPU and ALU, Memory organizations, Necessary examples related with the subjects
3	Data EEPROM, Interrupts, I/O ports, Necessary examples related with the subjects
4	PSP (parallel slave port), Timer0, Timer1, PSP (parallel slave port), Timer0, Timer1, Necessary examples related with the subjects
5	Timer2, CCP module, Timer2, CCP module, Necessary examples related with the subjects

6	MSSP module, USART, Necessary examples related with the subjects
7	10-bit ADC module, In circuit serial programming, Necessary examples related with the subjects
8	Mid-Term Exams
9	Instruction set, Necessary examples related with the subjects
10	Summary of MPASM, Necessary examples related with the subjects
11	PIC assembler compiler directives, Necessary examples related with the subjects
12	The general structure of MPLAB IDE, Necessary examples related with the subjects
13	Introduction of a sample project (hardware and software)
14	Introduction of a sample project (hardware and software)
15	Introduction of a sample project (hardware and software)
16,17	Final Exams

Calculation of Course Workload			
Activities	Count	Time (Hour)	Total Workload (Hour)
Weekly classroom time	14	3	42
Weekly study time (review, reinforcing, preparation)	14	3	42
Homework			
Taking a quiz			
Studying for a quiz			
Oral exam			
Studying for an oral exam			
Report writing (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	2	2
Studying for Mid-Term Exam	1	25	25
Final Exam	1	2	2
Studying for Final Exam	1	25	25
Total workload			138
Total workload / 30			4.6
Course ECTS Credit			5

Assessment	
Activity Type	%
Mid-term	40
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	60
Total	100

COURSE CONTRIBUTION TO THE PROGRAM OUTCOMES

(5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)

NO	PROGRAM OUTCOMES	Contribution
1	a. Sufficient knowledge of mathematics	
	b. Sufficient knowledge of basic sciences	
	c. Sufficient basic engineering and Electrical-Electronics engineering knowledge	5
	d. Skill of applying all these knowledge and experience to complicated Electrical-Electronics engineering problems	
2	Skill of defining, identifying, formulating and solving the complicated problems in Electrical-Electronics engineering and related areas by applying appropriate analysis and modelling methods.	5
3	Skill of designing a complicated process, system, equipment or product by applying modern design methods under realistic constraints and conditions.	
4	To analyze and solve the complicated engineering problems:	
	a. skill of developing, selecting and applying the required techniques and devices	
	b. skill of using information technologies effectively	
5	To study the complicated on the complicated Electrical-Electronics engineering problems and research subjects:	
	a. skill of experimental design	
	b. skill of performing the experiments, collecting the data and analyzing and interpreting the results	
6	a. Skill of performing individual studies	
	b. Skill of performing intra and interdisciplinary and multidisciplinary teamwork and studies	
7	a. Skill of effective oral and written communication in Turkish and English	
	b. Skill of improving and using foreign language knowledge	
	c. Skill of effective reporting, understanding the reports and preparing the design and production reports	
	d. Skill of effective presentation and giving and getting clear and understandable instructions.	
8	Awareness of the necessity of life-long learning and skill of accessing to information and following the improvements in contemporary science and technology	
9	a. Awareness of necessity of behaving in accordance with the ethical principles and awareness of the importance of having professional ethical responsibilities	
	b. Knowledge about legal regulations and standards of engineering	
10	a. Knowledge about project management, risk management and change management	
	b. Awareness of the significance of entrepreneurship and innovation	
	c. Knowledge about sustainable development	
11	Knowledge about the effects of engineering applications and practices on the global and social health, ecology and safety, knowledge about the current problems in relation to the working areas of Electrical-Electronics engineering; and awareness of the legal issues resulting from engineering solutions	
12	Knowledge about modern problems in local and universal scale	

INSTRUCTORS

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Date:22.07.2024