Course title	Code	semester	T+U	credit	ECTS
Microprocessors and Programming		4	2 +2	3	4

Prerequisite Courses	None
Language of the Course	English
Course Level	Undergraduate
Type of Course	Compulsory
Course Coordinator	
Instructors	
Course Assistants	
The aim of lesson	To teach the basic concepts of microprocessor/microcontroller, structures, programming methods and relations with peripheral units and to gain the ability to design.
Course Content	Basic concepts of microprocessors. Examination of memories, working principles and types. Address space and memory design. Microprocessors and I/O basic concepts. Interrupt structures and interrupt priority. Direct memory access. I/O interface design. Examining the PIC 16F877 or a processor to be specified: Hardware and Software. Examination of command timelines; Simulation or practical implementation of circuit design and assembly programming
Course Learning Outcomes	**At the end of this course, the student;** **1.** Knows the basic concepts of Microprocessor/Microcontroller **2.** Knows the units that make up the processor and its operation, **3.** Knows instruction sets and programming methods, **4.** Recognizes peripherals and knows connection methods, 1. **5.** Can design and program a system for a specific purpose.

Weeks	Topics
one	Basic Concepts of Microprocessors
2	Memories, Principles of Operation, and Analysis of Types
3	Address Space and Memory Design
4	Microprocessors and I/O Basic Concepts; I/O Interface Design
5	Cutting Structures and Cutting Priority; Direct Memory Access
6	PIC 16F877 Or Introducing a Processor to be Specified: Hardware
7	PIC 16F877 Or Introducing a Processor to be Specified: Hardware (Bus, Address Paths, Registers, Memory Structure etc.)
8	PIC 16F877 Or Introducing a Processor to be Specified: Hardware (Bus, Address Paths, Registers, Memory Structure etc.)
9	Introducing PIC 16F877 or a Processor to be Specified: Software
10	Introducing PIC 16F877 or a Processor to be Specified: Software
11th	Examining Command Timelines
12	Introduction of Timer and Use of Related Recorders
13	Introduction and Usage of ADC (Analog To Digital Converter)
14	Introduction and Usage of DAC (Digital To Analog Converter)
15	Introduction and Usage of DAC (Digital To Analog Converter)

General Competencies

resources

Brey, B., (1984). Microprocessor/Hardware Interfacing and Applications.
Karakaş, H., Advanced PIC 16F84 Applications I.
Şahin, H., (2017). PIC Programming Techniques and PIC16F877A.

Evaluation System

The dates, days and hours of the Midterm Exam, Quiz, Final Exam and Evaluations will be announced later, according to the decision of the Faculty Administrative Board.

	WITH PROGRAM LEARNING OUTCOMES COURSE LEARNING OUTCOMES RELATIONSHIP TABLE										
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
LO1	4	4	5	5	5	5	2	5	5	one	2
INCREASE2	4	3	4	5	5	4	3	3	5	1	2
INCREASE3	5	4	5	3	5	4	3	4	4	2	3
INCREASE4	4	4	4	5	4	4	2	3	5	3	2
LO5	5	4	4	4	4	5	2	4	3	2	2
LO: Learning Outcomes OP: Program Outcomes											
Contribution Level	**1 Very Low**		**2 Low**		**3 Medium**		**4 High**		**5 Very High**		

Relation of Program Outcomes and Related Course

Lesson	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
Microprocessors and Programming	4	4	5	4	4	4	2	4	5	2	2