MICROCONTROLLERS

1	Course Title:	MICROCONTROLLERS
2	Course Code:	ELES224
3	Type of Course:	Optional
4	Level of Course:	Short Cycle
5	Year of Study:	2
6	Semester:	4
7	ECTS Credits Allocated:	3.00
8	Theoretical (hour/week):	2.00
9	Practice (hour/week):	0.00
10	Laboratory (hour/week):	0
11	Prerequisites:	
12	Language:	Turkish
13	Mode of Delivery:	Face to face
14	Course Coordinator:	Öğr.Gör. HASAN BAYAZIT
15	Course Lecturers:	Öğr.Gör. Ömer Eriş Öğr.Gör. Hasan Bayazit
16	Contact information of the Course Coordinator:	hashan@uludag.edu.tr Tel: 2942345 Adres: U.Ü Teknik Bilimler MYO Görükle
17	Website:	
18	Objective of the Course:	The main purpose of this course is to introduce architecture of microcontrollers, programming of microcontrollers and using in industrial applications.
19	Contribution of the Course to Professional Development:	To teach essentials of microcontroller and its applications.
20	Learning Outcomes:	
	1	Describes the architecture of microcontrollers.
	2	Explains stages of microcontroller programming .
	3	Be able to develop microcontroller program in assembly language.
	4	Be able to develop microcontroller program in C language.
	5	Designs microcontroller systems.
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21	Course Content:	

Course Content:	

Week	Theoretical	Practice
1	Introduction.	
2	Microcontroller architecture.	
3	Microcontroller programming process steps.	
4	Assembly language instructions.	
5	Digital input and digital output operations.	

6	Loop commands and time delay.	
7	Bit shift and logical operation instructions.	
8	Midterm exam.	
9	Arithmetic operation instructions.	
10	The use of translation tables.	
11	Frequency division operations, the use of timers and counters.	
12	Interrupts.	
13	Program development with C language codes.	
14	Program development with C language codes.	

22	Textbooks, References and/or Other Materials:	Mikrodenetleyiciler ve Pic Programlama, Orhan Atınbaşak, Atlaş yayınları İleri Pic Uygulamaları 1, Hakan Karakaş, Atlaş yayınları

23	Assesment	

TERM LEARNING ACTIVITIES	NUMBER	WEIGHT
Midterm Exam	1	20.00
Quiz	0	0.00
Home work-project	1	20.00
Final Exam	1	60.00
Success Grade		100.00
Total		100.00

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	2.00	28.00
Practicals/Labs	0	0.00	0.00
Self study and preperation	10	2.00	20.00
Homeworks	2	5.00	10.00
Projects	2	5.00	10.00
Field Studies	0	0.00	0.00
Midterm exams	1	10.00	10.00
Others	0	0.00	0.00
Final Exams	1	14.00	14.00
Total Work Load			102.00
Total work load/ 30 hr			3.07
ECTS Credit of the Course			3.00

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25	CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS															

	PQ1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ10	PQ11	PQ12	PQ13	PQ14	PQ15	PQ16
ÖK1	0	0	0	0	3	0	5	0	4	0	0	0	0	0	0	0
ÖK2	0	0	0	0	4	0	5	0	4	0	0	0	0	0	0	0
ÖK3	0	0	0	0	3	0	5	0	5	0	0	0	0	0	0	0
ÖK4	0	0	0	0	3	0	5	0	5	0	0	0	0	0	0	0

ÖK5	0	0	0	0	3	0	5	0	5	0	0	0	0	0	0	0

LO: Learning Objectives   PQ: Program Qualifications

Contribution Level:	1 very low	2 low	3 Medium	4 High	5 Very High