

INDUSTRIAL AUTOMATION

1	Course Title:	INDUSTRIAL AUTOMATION	
2	Course Code:	EEM4101	
3	Type of Course:	Optional	
4	Level of Course:	First Cycle	
5	Year of Study:	4	
6	Semester:	7	
7	ECTS Credits Allocated:	4.00	
8	Theoretical (hour/week):	3.00	
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.Dr. GÖKHAN YENİKAYA	
15	Course Lecturers:	Öğretmen BAYAZİT DİRİM	
16	Contact information of the Course Coordinator:	yenikaya@uludag.edu.tr	
17	Website:		
18	Objective of the Course:	Introducing the basic elements of industrial automation systems and teaching their usage, teaching PLC programming techniques and gaining the ability to write programs for possible scenarios that may occur in automation systems.	
19	Contribution of the Course to Professional Development:	To be able to follow innovations and apply them in the field by using the competence of research and analysis.	
20	Learning Outcomes:		
		1	To be able to apply theoretical and applied knowledge in modeling and solving engineering problems in the field of automation;
		2	To be able to identify, define and solve complex engineering problems encountered in the field of Industrial Automation by choosing appropriate analysis and modeling methods;
		3	To be able to design a complex process encountered in the field of Industrial Automation under realistic constraints and conditions by applying modern design methods;
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21	Course Content:		
		Course Content:	
Week	Theoretical	Practice	
1	Components of the Industrial Automation system, Industrial signs and standards.		

2	Basic PLC architecture, PLC operation cycle, PLC selection, examination of S7-200 PLC basic features.	
3	Using Microwin program and running the program on PLC, debug operations.	
4	STL programming and stack usage-application examples.	
5	Input / Output commands and sequential control operations-application examples.	
6	Programming operations using timers-application examples.	
7	STL programming and stack usage-application examples.	
8	Course Repetition (Term project work is determined).	
9	Operations with Comparison Commands - application examples.	
10	Structured programming on PLC - application examples.	
11	Examination of interrupt operations, High speed counters and outputs - application examples.	
12	Asynchronous serial communication operations- Communication application on asynchronous motor speed control unit.	
13	SCADA systems	

Activities		Number	Duration (hour)	Total Work Load (hour)
Theoretical	Materials. Disen Yayinevi. Z. Simatic, S7-200 Program Controller System Manual; Siemens.	14	3.00	42.00
Practicals/Labs		0	0.00	0.00
SEMESTER LEARNING ACTIVITIES	NUMBER	WEIGHT	0.00	0.00
Homeworks		0	0.00	0.00
Midterm Exam	1	40.00	0.00	0.00
Projects	0	0.00	0.00	0.00
Quiz	0	0.00	0.00	0.00
Field Studies		0	0.00	0.00
Home work project	0	0.00	0.00	0.00
Midterm exams	1	40.00	40.00	40.00
Final Exam	1	60.00	0.00	0.00
Others		0	0.00	0.00
Total	2	100.00	40.00	40.00
Final Exams		1	40.00	40.00
Contribution of Term (Year) Learning Activities to		1	40.00	40.00
Total Work Load				162.00
Total work load/ 30 hr				4.07
Contribution of Final Exam to Success Grade		60.00		
ECTS Credit of the Course				4.00
Total		100.00		
Measurement and Evaluation Techniques Used in the Course		Measurement and evaluation are carried out according to the principles of Bursa Uludağ University Postgraduate Education Regulation.		

24	ECTS / WORK LOAD TABLE
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ÖK3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LO: Learning Objectives PQ: Program Qualifications																
Contrib ution Level:	1 very low		2 low		3 Medium		4 High		5 Very High							