

SCADA SYSTEMS

1	Course Title:	SCADA SYSTEMS	
2	Course Code:	ELES220	
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:	None	
12	Language:	Turkish	
13	Mode of Delivery:	Face to face	
14	Course Coordinator:	Öğr.Gör. ÖMER ERİŞ	
15	Course Lecturers:		
16	Contact information of the Course Coordinator:	omereris@uludag.edu.tr 0541 522 2059 Uludağ Üniversitesi İnegöl Meslek Yüksekokulu İnegöl/BURSA	
17	Website:		
18	Objective of the Course:	To gain qualification in setting up scada system and record-keeping operations.	
19	Contribution of the Course to Professional Development:		
20	Learning Outcomes:		
		1	Ability to use scada program.
		2	Ability to prepare computer and control system connection and labels in a correct way.
		3	Ability to prepare scada interface
		4	Ability to use OPC (Open Process Control) server program
		5	Ability to do Tag logging and alarm handling settings
		6	Ability to record tag status and data on database.
		7	Ability to use visual programming interface.
		8	Ability to use computer ports and to monitor and to record data using visual programming.
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21	Course Content:		
		Course Content:	
Week	Theoretical	Practice	
1	Scada program 1. What is Scada? 2. Properties of Scada 3. Components of Scada Program 4. Requirements of Scada Program 5. Installations of Scada Programs		

2	Scada Program and control device connection 1. Scada Program and control device connection 2. Making connection settings 3. Tag concept 4. Object tag connection	
3	Design of Scada interface 1. Page Object 2. Buttons 3. Input-Output Units 4. Other objects	
4	Opc (Open Process Control) server 1. What is OPC? 2. Types of Opc 3. Opc installation 4. Adding device to Opc server 5. Adding tag to Opc server 6. Communicator control device with Opc server	
5	Tag Logging 1. What is tag logging? 2. Archive Settings 3. Tag Logging settings on Scada program 4. Monitoring tag status using Trend object.	
6	Alarm Handling 1. What is Alarm handling? 2. Settings of Alarm handling 3. Showing Alarm on page	
7	Recording to database 1. Database 1.1. What is database? 1.2. Creating database 1.3. What is Sql? 1.4. Creating Dsn 1.5. Showing Alarm on page 2. Database on Scada 2.1. Creating Tag 2.2. Adding button 2.3. Adding record code to database	
8	Repeating courses and midterm exam	
9	Visual programming interface 1. Visual Programming 1.1. What is visual programming? 1.2. Methods and events 2. Installation of visual programming 2.1. Steps of installation 2.2. First program 2.3. Using menus	

10	Visual programming objects 1. Visual programming language objects 1.1. Form object 1.2. Command button object 1.3. Textbox object 1.4. Slider bar object 1.5. Combobox List 1.6. Radio button object 1.7. Listbox object 1.8 Image object	
11	Visual programming objects 1. Visual programming language objects 1.1. Form object 1.2. Command button object 1.3. Textbox object 1.4. Slider bar object 1.5. Combobox List 1.6. Radio button object 1.7. Listbox object 1.8 Image object	
12	Computer ports and visual programming 1. Parallel port programming 1.1. Preparing parallel port interface 1.2. Parallel port program 2. Serial port programming 2.1. Mscomm object 2.2. Serial port program	
13	Device control using visual programming language 1. Opc server 1.1. Adding device to Opc server 1.2. Adding Opc server object to program 1.3. Changing tags 1.4. Reading tag	
14	Data monitoring and recording using visual programming 1. Recording to database 1.1. Creating database connection 1.2. Database recording codes	

22	Textbooks, References and/or Other Materials:	SCADA for Industry; David Bailey, Edwin Wright
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23	Assesment	
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TERM LEARNING ACTIVITIES	NUMBE R	WEIGHT
Midterm Exam	1	40.00
Quiz	0	0.00
Home work-project	0	0.00
Final Exam	1	60.00
Total	2	100.00
Contribution of Term (Year) Learning Activities to Success Grade		40.00
Contribution of Final Exam to Success Grade		60.00
Total		100.00
Measurement and Evaluation Techniques Used in the Course		

24	ECTS / WORK LOAD TABLE	
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Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	3.00	42.00
Practicals/Labs	0	0.00	0.00
Self study and preperation	14	3.00	42.00
Homeworks	0	0.00	0.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	14.00	14.00
Others	0	0.00	0.00
Final Exams	1	22.00	22.00
Total Work Load			120.00
Total work load/ 30 hr			4.00
ECTS Credit of the Course			3.00

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	4	0	0	0	0	0	0	0	0	0	0	0
ÖK2	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0
ÖK3	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0
ÖK4	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0
ÖK5	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0
ÖK6	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0
ÖK7	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0
ÖK8	0	0	0	4	4	0	0	0	0	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				