Jordan University of Science and Technology

Faculty of Engineering

Industrial Engineering Department

IE434 Control And Automation Lab

Summer Semester 2019-2020

Course Catalog
1 Credit Hours. PLC programming basics using ladder logic, Microcontroller programming using C, Servo motor control and performance response curves. Process Control and acquiring physical data from various sensors. On/Off control and PID Control basics. Basics of Robotics.

Text Book	
Title	Handouts and lab material
Author(s)	Tarek Al-Hawari
Edition	1st Edition
Short Name	ref 1
Other Information	

Instructor	
Name	**Mrs. EBTEHAL YOUNIS**
Office Location	M6 L-0
Office Hours	
Email	emyounis@just.edu.jo

Class Schedule & Room
Section 1: Lecture Time: Sat, Thu : 14:30 - 17:30 Room: LAB

Prerequisites		
Line Number	**Course Name**	**Prerequisite Type**
294330	IE433 Control And Automation	Prerequisite / Study

Tentative List of Topics Covered		
Weeks	**Topic**	**References**
Weeks 1, 2, 3, 4, 5, 6, 7, 9, 10, 11	1- Experiment 1, Basics of ladder logic on Siemens PLC S7 200 2-Experiment 2, Basics of ladder logic on Siemens PLC S7 200 3- Experiment 3 Basics of ladder logic on Siemens PLC S7 300 (distribution station) 4- Experiment 4 Basics of ladder logic on Siemens PLC S7 300 (sorting station) 5- Experiment 5, Basics of ladder logic (analog inputs/ analog outputs) 6- Experiment 6, Introduction to process trainer components (sensors and actuators) 7- Midterm exam 8- Experiment 7 ,On/Off Control (Temperature and level). 9- Experiment 8, PID Feedback Control (level and pressure). 10- Experiment 9 , Basics of Lego robot control 11- Experiment 10, Microcontroller basics (arduino)	

Mapping of Course Outcomes to Program Student Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Design, develop, and conduct engineering experiments and analyze outcome data. [1SLO3, 1SLO6]	70%	
Apply learned techniques, tools, and skills to solve engineering problems. [1SLO1]	30%	

Relationship to Program Student Outcomes (Out of 100%)						
SLO1	SLO2	SLO3	SLO4	SLO5	SLO6	SLO7
30		35			35	

Evaluation	
Assessment Tool	**Weight**
Midterm	30%
quizzes	30%
final	40%

Policy	
course policy	11 Experiments are conducted with quizzes made for each one for a total of 30%. A midterm exam is done which worth 30% and a final exam worth 40%

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