



**Jordan University of Science and Technology**  
**Faculty of Engineering**  
**Electrical Engineering Department**

EE597 Special Topics In Control - JNQF Level: 6

Second Semester 2023-2024

**Course Catalog**

3 Credit Hours. Introduction to industrial automation and control. Overview of automation systems and ICS architecture, data communication and industrial networks, Supervisory Control and Data Acquisition (SCADA) and Distributed Control Systems (DCS), Human Machine Interface (HMI), programmable logic controllers (PLC), industrial application and study cases.

**Teaching Method:** On Campus

**Text Book**

<b>Title</b>	PLC and SCADA
<b>Author(s)</b>	Jitender Singh, Monika Deswal
<b>Edition</b>	1st Edition
<b>Short Name</b>	1
<b>Other Information</b>	

**Course References**

Short name	Book name	Author(s)	Edition	Other Information
2	Practical SCADA for industry.	David Bailey, Edwin Wright.	1st Edition	
3	Data communications and networking	Behrouz A. Forouzan with Sophia Chung Fegan.	5th Edition	
4	Papers, handouts, webpages, case studies	Various	30th Edition	

**Instructor**

Name	<b>Dr. Ahmad Bashaireh</b>
Office Location	-

Office Hours	Sun : 08:00 - 09:15 Tue : 08:00 - 09:15 Wed : 11:30 - 13:30 Thu : 14:45 - 16:15
Email	aabashareh@just.edu.jo

Class Schedule & Room
Section 1: Lecture Time: Mon, Wed : 10:00 - 11:30 Room: E2008

Tentative List of Topics Covered		
Weeks	Topic	References
Week 1	Overview of automation systems and ICS architecture	
Weeks 3, 4, 5, 6, 7	Data communication and industrial networks	
Weeks 8, 9, 10, 11	Programmable logic controllers (PLC)	
Weeks 12, 13, 14, 15, 16	Applications and study cases	
Week 2	Supervisory Control and Data Acquisition (SCADA) technologies	

Mapping of Course Outcomes to Program Outcomes and NQF Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Explore the impact of automated systems in modern control processes [1SO4, 1SO7] [1L6K1]	10%	Midterm, Semester Work
Describe the basic concepts, architecture, operation and communication of Distributed Control Systems [1SO7] [1L6C3]	10%	Midterm, Semester Work, Project
Design automation systems with industrial control components. [1SO2] [1L6S1]	15%	Semester Work, Project
Describe the fundamental concepts and principles of communication systems. [1SO7] [1L6C4]	15%	Midterm, Semester Work
Understand the basics of types of networks and network protocols in industrial networks [1SO7] [1L6C3]	10%	Midterm, Semester Work, Project
Examine the automation requirements for different types of industries [1SO3, 1SO4, 1SO7] [1L6C1]	40%	Project

Relationship to Program Student Outcomes (Out of 100%)						
SO1	SO2	SO3	SO4	SO5	SO6	SO7
	15	13.33	18.33			53.33

Relationship to NQF Outcomes (Out of 100%)				
L6K1	L6S1	L6C1	L6C3	L6C4
10	15	40	20	15

Evaluation	
Assessment Tool	Weight
Midterm	25%
Semester Work	25%
Project	50%

Date Printed: 2024-09-04