EE448-2: Components of control

Course code and name	EE448-2: Components of control
Credits units	2 Credit units
Contact hours	4 Contact hours: 1 lecture, 1 tutorial and 2 practical
Instructor name	Dr. Sabeur Masmoudi
Textbook	Automating Manufacturing Systems with PLCs, Hugh Jack, Free Software Foundation, USA, Edition 5.1, 2008.
Other supplemental materials	Programmable Logic Controllers, Frank D. Petruzella, 4th Edition, McGraw-Hill, USA, 2011, ISBN 978-0-07-351088-0
	Specific course information
a. Course description	This course will give the students a sufficient background on the several components of automatic control systems and industrial controller and study their real industrial applications.
b. Prerequisite	EE444-3
c. Required / Elective	Elective
	Course Learning Outcomes

CLO of the Lecture Activities:

CLO1: Describe the structure of an industrial automation system.

CLO2: Describe the structure of an industrial automation system.

CLO3: Explain the SFC programming Language.

CLO4: Develop an industrial automation system based on PLC.

CLO5: Analyze the performance of PLC control system.

CLO of the Laboratory Activities:

CLO1: Verify theory and to improve knowledge learned in class.

CLO2: Formulate and solve problems related to theory.

CLO3: Design and safety conducts an experimental procedure.

CLO4: Independently perform accurate quantitative measurements, interpret experimental results, perform calculations on these results and draw a reasonable,

accurate conclusion.

CLO5: Communicate critical analysis of scientific information through written reports.

CLO6: Be integrated inside a group of work and respect the team working.

Brief list of topics to be covered

- Functional structure of APS
- Elements of APS
- Types of industrial sensors
- Programming Language: SFC, CHART, IL, ST etc.
- Wiring of PLC Interfaces
- Structure of PLC and interfaces
- Develop some real industrial applications
- Solve some engineering problems from industrial process

Mapping Course Learning Outcomes to Student Outcomes

	Lecture Activities						
	SO1	SO2	SO3	SO4	SO5	SO6	SO7
CLO1							
CLO2							
CLO3							
CLO4							
CLO5							
	Laboratory Activities						
	SO1	SO2	SO3	SO4	SO5	SO6	SO7
CLO1							
CLO2							
CLO3							
CLO4							
CLO5							
CLO6							