

EE 512- Automated Industrial Systems (1)

CREDIT HOURS

3 Hours

CONTACT HOURS (Hours/week)

Lecture: 2; Tutorial/ Lab: 2

COURSE COORDINATOR

Dr Hassan Ibrahim

TEXT BOOK:

J. Hackworth, "Programmable Logic Controllers: Programming Methods and Applications", Pearson Education

COURSE DESCRIPTION:

Automated hierarchical levels and components. Detecting sensors and actuating elements, relay logic and their applications. Introduction to PLC.S. Types of PLCs and construction. Hardware configuration and descriptions. Programming and testing basic functions. Programming and testing advanced functions. Industrial Applications using PLCs

PREREQUISITE:

EE 411 OR EE 418

RELATION OF COURSE TO PROGRAM:

Elective

COURSE INSTRUCTION OUTCOMES:

The student is familiar with structures and behavior of automated systems, programmable logic controllers and applications in industrial systems.

TOPICS COVERED:

- Automated hierarchical levels and components.
- Detecting sensors and actuating elements, relay logic and their applications.
- Introduction to PLC.S.
- Types of PLCs and construction.
- Hardware configuration and descriptions.
- Programming and testing basic functions.
- Programming and testing advanced functions.
- Industrial Applications using PLCs

CONTRIBUTION OF COURSE TO MEET THE REQUIREMENTS OF CRITERION 5:

Professional Component Content			
Math and Basic Sciences	Engineering Topics	General Education	Engineering Design
	√	√	√

RELATIONSHIP OF COURSE TO STUDENT OUTCOMES:

Student Outcomes		Course Outcomes
a.	An ability to apply knowledge of mathematics, science, and engineering.	
b.	An ability to design and conduct experiments, analyze and interpret data.	
c.	An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.	√
d.	An ability to function on multi-disciplinary teams.	
e.	An ability to identify, formulate, and solve engineering problems.	√
f.	An understanding of professional and ethical responsibility.	
g.	An ability to communicate effectively.	
h.	The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal content	
i.	A recognition of the need for, and an ability to engage in life-long learning.	
j.	A knowledge of contemporary issues within and outside the electrical engineering profession.	
k.	An ability to use the techniques, skills, and modern engineering tools necessary for electrical engineering practice.	√