EC528- Data Communications

CREDIT HOURS

3 Hours

CONTACT HOURS (Hours/week)

Lecture: 2; Tutorial: 2

COURSE COORDINATOR

Dr. Ashraf Mamdouh

TEXT BOOK

Behrouz Forouzan, "Data Communications and Networking" McGraw- Hill

COURSE DESCRIPTION

This course covers the fundamental issues impacting all data networks and reviews virtually most of the important new standard and technological development, offering especially Comprehensive coverage of the physical layer and packet switching techniques

PREREQUISITE:

EC 422

RELATION OF COURSE TO PROGRAM

Elective

COURSE INSTRUCTION OUTCOMES

The student will be able to:

- Understand the Physical and data link layer
- Understand the Packet switching techniques
- Understand the Medium access control techniques

TOPICS COVERED

- Data Communication
- Data Encoding
- Digital data communication technique
- Data link control
- Error control mechanisms
- Flow control mechanisms
- Circuit switching
- Packet switching
- HDLC protocol
- CSMA-CD
- CSMA-CA
- Congestion control
- Spread spectrum techniques

CONTRIBUTION OF COURSE TO MEET THE REQUIREMENTS OF CRITERION 5:

Professional component Content			
Math and Basic Sciences	**Engineering Topics**	**General Education**	**Other**
	✓		

RELATIONSHIP OF COURSE TO STUDENT OUTCOMES:

Student Outcomes		Course aspects
A	An ability to apply knowledge of mathematics, science, and engineering	a_1 a_2
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 economics, environmental, social, political, ethical, health, and safety, manufacturability, and sustainability	c_1
D	An ability to function on multi-disciplinary teams.	
E	An ability to identify, formulate, and solve engineering problems	e_1
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 social content	h_1
I	A recognition of the need for, and an ability to engage in life-long learning.	i_2
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.	