CC 527 – COMPUTER AIDED DESIGN

CREDIT HOURS

3 Hours

CONTACT HOURS (Hours/week)

Lecture: 2; Tutorial: 2; Lab: 2

TEXT BOOK

Principles of CMOS VLSI Design, a systems perspective , Weste and Eshraghian , Second Edition , Addison – Wesley , 2005

COURSE DESCRIPTION

To introduce fundamental algorithms and techniques for computer aided integrated circuit design. It covers aspects of design flow, physical design, logic optimization, timing analysis and verification, synthesis for testability.

PREREQUISITE:

CC 311 , CC 341

RELATION OF COURSE TO PROGRAM

COURSE INSTRUCTION OUTCOMES

The student will be able to:

produce highly qualified and skilled engineers who can cope with state of the art technologies in digital circuit design & implementation

TOPICS COVERED

- Introduction to CMOS Circuits.
- Circuit & system Representation.
- Circuit Characterization.
- Circuit performance estimation.
- Interconnect and Wiring.
- Combinational Circuit Design.
- Sequential Circuit Design.
- Design methodology and Tools.
- Datapath subsystems.
- Datapath subsystems.
- Design tools I.
- Design tools II.

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	
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 c_2 c_3
D	An ability to function on multi-disciplinary teams.	d_1 d_2 d_3 d_4
E	An ability to identify, formulate, and solve engineering problems	e_1 e_2 e_3
F	An understanding of professional and ethical responsibility	f_1 f_2
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 h_2 h_3 h_4
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.	