



**d.General and Transferable Skills: :**

1 -	d1. Collaborate effectively within multidisciplinary team
2 -	d2. Communicate effectively.
3 -	d3. Effectively manage tasks, time, and resources.
4 -	d4. Search for information and engage in life-long self-learning discipline.

**Course Topic And Contents :**

Topic	No. of hours	Lecture	Tutorial / Practical
Definitions and Terminologies of the state-of-the art of digital integrated technology.	5	3	2
Design Rules Design methodology and tools	5	3	2
Static behaviour of digital circuits	10	6	4
Dynamic behaviour of digital circuits	10	6	4
Designing for high-speed digital circuits	5	3	2
Designing for low-power digital circuits	5	3	2
Design digital circuits using different clocking strategy.	5	3	2
Semiconductor static memories and RAM Cores.	10	6	5
Peripheral memory circuits.	5	3	2
Apply DSP applications	10	6	4
Low-voltage low-power design	5	3	2

**Teaching And Learning Methodologies :**

Interactive Lecture
Discussion
Problem Solving
Experiential Learning
Cooperative Learning
Research
Site Visit (Field Trip)
Project / Assignment

**Course Assessment :**

Methods of assessment	Relative weight %	Week No	Assess What
Final exam	40.00		
Quizzes o In Class Quizzes	10.00		
o Assignments	10.00		

o Lab Experiment	5.00		
o Mid-Term Exams	30.00		
o Oral Exam	5.00		

**Course Notes :**

Integrated system design, Memory cells and systems, Logic arrays, VLSI design methodologies, Applications in digital signal and data processing systems, Low-power, low-voltage design issues.

**Recommended books :**

Recommended book (textbook): Jan M. Rabaey; Digital Integrated Circuits-2nd Ed.; Prentice Hall; 2003.

Essential book: Neil H.E. Weste and David Harris; "CMOS VLSI Design, A Circuits and Systems Perspective", 3rd Ed.; Pearson Addison-Wesley; 2005.