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Department of Computer Engineering	
Computer Design Lab (66493)	
Total Credits	**1**
major compulsory	
Prerequisites	P1 : Computer Architecture I (66323)

Course Contents

Basic CPU design and implementation which includes Both Datapath and Control

	Intended Learning Outcomes (ILO's)	Student Outcomes (SO's)	Contribution
1	The ability to design complex systems from primitive ICs	B	50 %
2	The ability to analyze and design the CPU internal architecture that include instruction set, timing, and the different CPU components interfacing	C	30 %
3	The ability debug and test complex Hadware System	C	20 %

Textbook and/ or Refrences

Lab Experiments, Different IC Datasheets, Books and materials used in the Prerequisite course.

Assessment Criteria	Percent (%)
Laboratory Work	60 %
Final Exam	40 %

Course Plan

Week	Topic
1+2	Instruction Set Design
3+4	Data path Design: ALU design
5+6	Data path Design: Buses, Registers, Multiplexers and Program Counter
7+8	Memory Interface Design
9	State Analysis and State Diagram
10	Timing Analysis
11+12	Controller Design
13-16	Testing and debugging