



National Computing Education Accreditation Council
NCEAC



NCEAC.DOC.001-E

COURSE DESCRIPTION

NAME OF INSTITUTION	Lahore Garrison University
PROGRAM (S) TO BE EVALUATED	Computer Science , Spring 2022

Course Description :

Course Code	CSC332																							
Course Title	Digital Logic Design																							
Credit Hours	3+1																							
Prerequisites by Course(s) and Topics	Basic Electronics/Applied Physics																							
Assessment Instruments with Weights (homework, quizzes, midterms, final, programming assignments, lab work, etc.)	SESSIONAL (Quizzes, Assignments, Presentations) =25 % Midterm Exam =25 % Final Exam = 50%																							
Course Coordinator	Hassan Sultan																							
URL (if any)																								
Current Catalog Description																								
Textbook (or Laboratory Manual for Laboratory Courses)	1. Text Book Logic and Computer Design Fundamentals by M. Mano 2nd edition Publisher Prentice Hall 2. Other Resources/Reference Books Digital fundamentals Floyd (9th edition)																							
Reference Material	3. Other Resources/Reference Books Digital fundamentals Floyd (9th edition)																							
Course Goals	1. Introduce the concept of digital and binary systems 2. Be able to design and analyses combinational logic circuits. 3. Be able to design and analyses sequential logic circuits. 4. Understand the basic software tools for the design and implementation of digital circuits and systems. 5. Reinforce theory and techniques taught in the classroom through experiments and projects in the laboratory.																							
Course Learning Outcomes (CLOs):	<table><tr><td>At the end of the course the students will be able to:</td><td>Domain</td><td>BT Level*</td></tr><tr><td>1. Students can analyse digital logic circuits.</td><td></td><td></td></tr><tr><td>2. Students can design digital logic circuits.</td><td></td><td></td></tr><tr><td>3. Students can write and interpret documentation for digital systems.</td><td></td><td></td></tr><tr><td>4. Students can implement and test digital circuits</td><td></td><td></td></tr><tr><td>5. Students will be able to understand the design principles and techniques used for Arithmetic and logic unit of computer</td><td></td><td></td></tr><tr><td colspan="3">* BT= Bloom's Taxonomy, C=Cognitive domain, P=Psychomotor domain, A= Affective domain</td></tr></table>			At the end of the course the students will be able to:	Domain	BT Level*	1. Students can analyse digital logic circuits.			2. Students can design digital logic circuits.			3. Students can write and interpret documentation for digital systems.			4. Students can implement and test digital circuits			5. Students will be able to understand the design principles and techniques used for Arithmetic and logic unit of computer			* BT= Bloom's Taxonomy, C=Cognitive domain, P=Psychomotor domain, A= Affective domain		
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Topics Covered in the Course, with Number of Lectures on Each Topic (assume 15-week instruction and one-hour lectures)	Week	Lecture	Topics Covered
	Week 1	1	AND Gate Operation
		2	OR Gate Operation
	Week 2	3	NOT Gate Operation
		4	NAND Gate Operation
	Week 3	5	NOR Gate Operation
		6	XOR Gate Operation
	Week 4	7	Construction of XOR Gate from NAND Gate
		8	Half Adder Operation
	Week 5	9	Full Adder Operation
		10	Full Adder Operation
	Week 6	11	Decoder Operation
		12	Decoder Operation
	Week 7	13	BCD to 7-Segment Display
		14	BCD to 7-Segment Display
	Week 8	1 hours	Mid Term
	Week 9	15	Combinational logic using NOR gates
		16	Combinational logic using NOR gates
	Week 10	17	Multiplexer Operation
		18	Multiplexer Operation
	Week 11	19	Multiplexer Operation Using Multiplexer and Demultiplexer/Decoder.
		20	Multiplexer Operation Using Multiplexer and Demultiplexer/Decoder.
	Week 12	21	J-K Flip Flop Operation
		22	J-K Flip Flop Operation
	Week 13	23	. D Latch
		24	. D Latch
	Week 14	25	Flip Flop Operation
		26	Flip Flop Operation
	Week 15	27	Random Access Memories Frequency Counter Design
		28	Random Access Memories Frequency Counter Design
	Week 16	29	Latching BCD Data for Displaying 7-segment
		30	Revision
	Week 17	2 hours	Final Term
Laboratory Projects/Experiments Done in the Course			
Programming Assignments Done in the Course			

Instructor Name	Hassan Sultan
Instructor Signature	
Date	