

ITEM	DETAILS	
1. Title of subject	COMPUTER ORGANISATION	
2. Subject code	STC104	
3. Status of subject	Core	
4. Stage	Year 1	
5. Credit Hour	4	
6. Pre-Requisite	None	
7. Assessment	40% Course work 10% Test 1 10% Test 2 10% Assignment 1 10% Assignment 2 60% Examination	
8. Semester	Semester 1	
9. Objective of subject	To enable students to: <ul style="list-style-type: none"> • Understand binary conversion • Understand floating point representation • Understand the concepts of logic gates • Design a logic circuit 	
10. Synopsis of subject	Discussion on the evaluation of computers; Data representation, Fixed-point representation, codes; Addition, Subtraction, Multiplication and division, using complements: Boolean algebra, Boolean function, basic gates, Sequential and Combination logic Components, Basic Computer Organization.	
11. Details of subject	Contents	Hours
Week 1	Topic: <ul style="list-style-type: none"> • Introduction • A brief history of computer system • Generation of Computers • Components of computer and its functions 	4

Week 2	<p>Learning Outcomes: At the end of the lessons students will be able to:</p> <ul style="list-style-type: none"> • Understand the History of computers • Various components of computer 	
	<p>Topics: Number System – Decimal to Binary Binary to Decimal Decimal to Octal Octal to Decimal and Binary</p>	4
	<p>Learning Outcomes: At the end of the lessons students will be able to:</p> <ul style="list-style-type: none"> • To convert from Decimal to Binary • To convert from Binary and Octal to Decimal 	
Week 3	<p>Topics: Decimal to Hexadecimal Hexadecimal to Decimal and Binary Hexadecimal to Octal and Octal to Hexadecimal</p>	4
	<p>Learning Outcomes: At the end of the lessons students will be able to:</p> <ul style="list-style-type: none"> • Convert from decimal to Hexadecimal • Convert from hexadecimal to decimal 	
Week 4 & 5	<p>Topics: Fixed point representation – Sign bit, Exponent , Mantissa IEEE Format.</p>	8
	<p>Learning Outcomes: At the end of the lessons students will be able to:</p> <ul style="list-style-type: none"> • To understand difference between integer numbers and floating numbers • To Represent the floating point numbers in the registers 	
Week 6 & 7	<p>Topics: Sign Notation – Sign magnitude Un sign magnitude 1's Complement, 2's complement addition, subtraction Binary multiplication and division</p>	8
	<p>Learning Outcomes: At the end of the lessons students will be able to:</p> <ul style="list-style-type: none"> • Understand the representation of negative numbers in the registers. • Difference between 1's complement and 2's complement. 	

Week 8 & 9	Topics: Basic Identities of Boolean Algebra. Commutative, Associative and Distributive Complement of a function		8
	Learning Outcomes: At the end of the lessons students will be able to: <ul style="list-style-type: none"> • Understand various rules of Boolean Algebra • Understand concept of simplification 		
Week 10 & 11	Topics: Logic gates – truth table, Standard simplification, Sum of products and Products of Sums		8
	Learning Outcomes: At the end of the lessons students will be able to: <ul style="list-style-type: none"> • Understand the different types of gates • Able to design simple logic circuit. • The concept of simplification using K map 		
Week 12 & 13	Topics <ul style="list-style-type: none"> • MAP Simplification Three Variable, Four variable, Logic circuits using AND and OR gates 		8
	Learning Outcomes: At the end of the lessons students will be able to: <ul style="list-style-type: none"> • Able to differentiate SOP and POS • Drawing logic circuits for SOP and POS 		
Week 14	Topics BCD to Excess –3 Code Converter BCD to Seven segment Decoder		4
	Learning Outcomes: At the end of the lessons students will be able to: <ul style="list-style-type: none"> • Understand the concept of Seven segment Decoder 		
	Total		56
12. Text	Compulsory	Lipscutz, S. <i>Essential Computer Mathematics</i> . Schaum's Outline Series.	
	Reference	Stalling, W. (2000). <i>Computer Organization and Architecture: Designing for Performance</i> (5 th ed.). Prentice Hall.	