

Semester	1	
Course	Major	
Paper Code	C1CS230112T & C1CS230112P	
Paper Title	DIGITAL SYSTEM DESIGN	
No. of Credits	4	
Theory/ Practical / Composite	Composite	
Minimum No. of preparatory hours per week a student has to devote	5	
Number of Modules	One	
Syllabus	<ol style="list-style-type: none"> 1. Introduction to Computers, Binary Number System, Signed number representation, Binary Arithmetic, Addition and Subtraction using Complement Operation. 2. Basic Logic Gates, NAND, NOR, XOR, XNOR. 3. Boolean Algebra, SOP, POS, Design of simple logic circuits, Simplification using Karnaugh Map, Applications 4. Combinational circuits – Adders, Subtractors, Comparators. 5. Multiplexer, Decoder, Encoder, Demultiplexer 6. Introduction to Sequential Circuits: Flip-flops – RS, D, JK, T, Master Slave 7. Registers, Counters, Design of generalized sequential circuits 	
Learning Outcomes	<ol style="list-style-type: none"> 1. The student will be able to perform various logical operations and mathematical operations in different number systems. 2. The student is expected to design digital electronic circuits of small and medium scale complexities. 3. The student will acquire knowledge about the roles and functions of gates and various combinational circuits and components. 4. The student will design and implement sequential circuits. 5. The student will design and implement multiple bit synchronous and asynchronous circuits. 	
Reading/Reference Lists	<ol style="list-style-type: none"> 1. Digital Fundamentals, Eleventh Edition, Thomas L. Floyd, Pearson 2. Digital Logic and Computer Design, M Morris Mano, Pearson Education India 3. Digital Computer Electronics, Malvino and Brown, Tata McGraw-Hill 4. Digital Circuits and Systems, IIT Madras, Prof. S. Srinivasan, https://nptel.ac.in/courses/117106086 	
Evaluation	Theory CIA: 12	Practical CA: 38

	Attendance: 3 Semester Exam: 45	Attendance: 2
Paper Structure for Theory Semester Exam	Answer 3 out of 5 of 15 marks each	