GUJARAT TECHNOLOGICAL UNIVERSITY

Syllabus for Diploma in Vocation (D.Voc), 4th Semester
Branch: Software Development
Subject Name: Digital Electronics
Subject Code: 1240202

With effective from academic year 2018-19

Teaching Scheme			Credits	Examination Marks				Total Marks
				Theory		Tutorial/ Practical		
L	P	OJT	C	University exams (ESE)	Progressive Assessment (PA)	External Practical /viva Exam(ESE)	Internal evaluation Practical /viva Exam(PA)	
3	-	-	3	50	-	-	-	50

L- Lectures; P- Practical; OJT- On Job Training; C- Credit; ESE- End Semester Examination; PA- Progressive Assessment

Course Content:

Sr. No.	Content	Hours
1.	Number Systems and Boolean Algebra • Basics of Analog and Digital • Boolean algebra, De-Morgan's law, Truth tables.	**09**
2.	Logical Circuits • Logic gates: AND, OR, NOT, NOR, NAND, XOR, XNOR • Combinational Circuits: **1.** Arithmetic Circuits: Half adders, Full adders, Subtractor **2.** Data Processing Circuits: Encoders, Decoders, Multiplexers, De-Multiplexers,	**09**
3.	Latches and Flip-Flops • Concept of Latches, Types of Latches, SR latch • SR Flip Flop, JK Flip Flop, D Flip flop, T Flip Flop, Flip Flop • Introduction to counters, Types of counters Asynchronous and Synchronous • Introduction to shift registers, types of shift registers	**07**
4.	Introduction to Display Devices • LED, LCD, 7 segment display	**07**
5.	Integrated Circuits and Memories • Introduction to IC's, Importance and applications, Linear and Digital IC's • Introduction to SSI, MSI, LSI and VLSI (Terminology & Definitions) • Memory Organization and Operations, RAM, ROM	**07**
	Total Hours:	**39**

Suggested Specification table with Marks (Theory):

Distribution of Theory Marks				
R Level	U Level	A Level	N Level	E Level
5	20	15	5	5

Legends: R: Remembrance; U: Understanding; A: Application, N: Analyze and E: Evaluate and above Levels (Bloom's Taxonomy)

1. **Reference Book(s):**
   Fundamentals of Digital Electronics, Aditya Chaturvedi, Khanna Publishing House