Course Code	Course Title	C	H	I	E	T
17U1DMC2	DIGITAL ELECTRONICS	4	5	25	75	100

Unit – I: Numbers Systems and Discrete Logic (15 hours)

Why Binary– binary to decimal – decimal to binary – octal – hexadecimal – ASCII code – Excess-3 Code – Gray Code – transistor inverter – OR gates – AND gates – Boolean Algebra – NOR gates – NAND gates.

Unit – II: Circuit Analysis and Design (15 hours)

Boolean Law and theorems –sum of product method – K-Map truth tables – Pairs, Quads, Octets – K-Map simplifications – Don't care – product of sum method – product of sum simplifications.

Unit – III: Data Processing and Arithmetic circuits (15 hours)

Multiplexers – De-multiplexers – 1-of- 16- Decoders – BCD-to-Decimal Decoders – 7 segment decoders – Encoders – Exclusive-OR gates – parity generators-checkers – Binary Addition – Binary Subtraction – 2's & 1's complement representation – Complement Arithmetic – Arithmetic building blocks.

Unit – IV: Flip-Flops, Clocks and timers (15 hours)

RS flip-flop – D Flip-Flop – JK Flip-Flop – JK Master Slave Flip-Flop – Schmitt Trigger – 555 Timer Astable – 555 Timer Monostable – 555 Timer Schmitt Trigger.

Unit – V: Shift Registers and Counters (15 hours)

Types of Registers – Serial in serial out – serial in parallel out – parallel in serial out – parallel in parallel out– Ring counter – Ripple Counter – Synchronous Counter – MOD counters – Preset-able counters.

Text Book:

1. Albert Paul Malvino & Donald P. Leach , Digital Principles and Applications , Fourth Edition, 2005, Tata McGraw-Hill Edition

Chapters:

Unit I: 1, 4
Unit II: 2
Unit III: 3.1 to 3.8, 5.1 to 5.7
Unit IV: 8.1, 8.3,8.6,8.7,8.8, 9.3,9.4
Unit V: 10, 11.1,11.3,11.5,11.6

Reference Book:

1. M.Morris Mano, Digital Logic and Computer Design, 2005, PHI