

## **Subject: INTRODUCTION TO DIGITAL ELECTRONICS**

### **Unit-1 Number systems**

Number system and their conversions: Binary, octal, Decimal, Hexadecimal number, BCD code, Grey Code, Excess 3 Code, binary arithmetic, one's and two 's complements.

### **Unit-2 Boolean Algebra**

Boolean Algebra, Boolean laws, De-Morgan's Theorem, Simplifications of logic expression using Boolean Algebra, Introduction, AND, OR, NOT, NAND, NOR, Ex-OR, Ex-NOR logic Gates, Universal gates, Realization of logic gate using Universal gates.

### **Unit- 3: Karnaugh-Map**

SOP and POS form, Conversion of logic expression into standard or canonical SOP and POS form, Minterm and Maxterm, Simplifications of logic expression using Karnaugh-Map upto 4 variables.

### **Unit -4: Introduction to Combinational & Sequential Logic Circuits:**

Combinational logic circuits such as Multiplexer, Demultiplexer, Encoder, Decoder etc., Introduction to sequential logic circuits such as various types of Flip Flop and its use in counters, shift registers.

### **Text Books:**

1. M.Morris Mano and M.D.Ciletti, "Digital Design", Pearson Education.
2. R P Jain, "Modern Digital Electronics", TMH.
3. Anand Kumar, Fundamentals of digital circuits 1<sup>st</sup> edition, Prentice Hall of India, 2001.