### Subject Code/ Name: CS

Staff Name : Ms. S. Suguna

Semester / Year : III / II

**Syllabus:**

**UNIT I BOOLEAN ALGEBRA AND LOGIC GATES 8**  
**Review of binary number systems - Binary arithmetic – Binary codes – Boolean algebra**  
**and theorems - Boolean functions – Simplifications of Boolean functions using**  
**Karnaugh map and tabulation methods – Logic gates**  
**UNIT II COMBINATIONAL LOGIC 9**  
**Combinational circuits – Analysis and design procedures - Circuits for arithmetic**  
**operations - Code conversion – Introduction to Hardware Description Language (HDL)**  
**UNIT III DESIGN WITH MSI DEVICES 8**  
**Decoders and encoders - Multiplexers and demultiplexers - Memory and programmable**  
**logic - HDL for combinational circuits**  
**UNIT IV SYNCHRONOUS SEQUENTIAL LOGIC 10**  
**Sequential circuits – Flip flops – Analysis and design procedures - State reduction and**  
**state assignment - Shift registers – Counters – HDL for Sequential Circuits.**  
**UNIT V ASYNCHRONOUS SEQUENTIAL LOGIC 10**  
**Analysis and design of asynchronous sequential circuits - Reduction of state and flow**  
**tables – Race-free state assignment – Hazards. ASM Chart**  
**TUTORIAL: 15 TOTAL : 60PERIODS**  
**TEXT BOOK**  
**1. M.Morris Mano, “Digital Design”, 3rd edition, Pearson Education, 2007.**  
**REFERENCES:**  
**1. Charles H.Roth, Jr. “Fundamentals of Logic Design”, 4th Edition, Jaico Publishing**  
**House, Latest Edition.**  
**2. Donald D.Givone, “Digital Principles and Design”, Tata McGraw-Hill, 2007.**