

**S.G.M. Bank English Medium College of Commerce and Management
Course Plan**

BCA

Semester-I

Paper Code & Title: US01EBCA01 (Digital Computer Electronics)

Total Credit: 2 (30 Sessions)

Faculty: Dr. Kamlesh Vaishnav

1. Course Objective

Student will be able to

1. describe basic electronics elements of computer systems
2. simplify Boolean equations (and hence circuits) using Boolean algebra and karnaugh Map
3. discuss the functions of various logic circuits and memory elements

2. Course Plan

UNIT-I: Gates and Boolean Algebra	06
Gates	2
Boolean algebra	1
Truth tables	1
Circuit equivalence	1
De Morgan's theorems	1
UNIT-II: Basic Digital Logic Circuits-I	06
Usage of Karnaugh Maps	3
Encoders	1
Decoders	1
Comparators	1
UNIT-III: Basic Digital Logic Circuits-II	06
Half Adder	1
Full Adder	1
Binary Adder-Subtractor	2
Multiplexers	2
UNIT-IV: Memory Elements & Counters	06
D Flip flops	2
Shift-left, shift-right and controlled buffer registers	2
Ring counters	2

3. Course Outcome

Students can

1. understand basic building block for computer systems

2. simplify Boolean equations (and hence circuits) using Boolean algebra and karnaugh Map
3. discuss the functions of various logic circuits and memory elements

Basic Text & Reference Books:

1. Malvino A. P.: Digital Computer Electronics, 2nd Edition, Tata McGraw, Hill Pub. Co. Ltd., New Delhi, 1990.
2. Gothmann, William H: Digital Electronics - An Introduction to Theory and Practice, 2nd Edition, PHI, 1982.
3. Tanenbaum A. S. : Structured Computer Organization, 3rd Edition, Prentice-Hall of India Pvt. Ltd., 1993.
4. Hall Douglas V. : Microprocessors and Interfacing - Programming and Hardware., McGraw Hill Book Company, 1986.
5. M.M. Mano : Computer System Architecture, 3rd Edition, Pearson Education, 2000.