



TRIPURA UNIVERSITY

**(A Central University)
Suryamaninagar-799022**

Syllabus

For

Semester – II

Computer Science

Year 2014

SEMESTER-II

Paper: H2

Subject: Digital Logic and Computer Organization (Theory)

Marks: 60 (48 + Internal-12)

Unit 1:

Boolean algebra and Logic Gates: Introduction to Boolean algebra, laws of Boolean algebra, Logic gates, universal logic gates, POS and POP notations, Canonical logic forms, Logic families:

Simplification of Boolean Functions: Laws of Boolean algebra and K-Maps, Tabulation Method. Combinational Circuits: Design Procedure of Combinational Circuits, Adders, Subtractors, Code Converters, Magnitude Comparator, Encoder, Decoder, Multiplexer, Demultiplexer, ROM, PLAs, PALs.

Sequential Circuits: Flip-Flops: SR, D, JK, T, Master/Slave F/F, Edge-triggered F/F, Excitation Tables: Registers, Counters: synchronous and asynchronous, Shift Registers, RAM.

Unit 2:

Basic Organization : Operational flow chart (Fetch, Execute), Instruction Cycle, Organization of Central Processing Unit, Hardwired & microprogrammed control unit, Single Organization, General Register Organization, Stack Organization, Addressing modes.

Memory Organization : Memory Hierarchy, Main memory (RAM/ROM chips), Auxiliary memory, Associative memory, Cache memory, Virtual Memory, Memory Management Hardware, hit/miss ratio, magnetic disk and its performance, magnetic Tape etc.

I/O Organization : Peripheral devices, I/O interface, Modes of Transfer, Priority Interrupt, Direct Memory Access, Input-Output Processor, and Serial Communication. I/O Controllers, Asynchronous data transfer, Strobe Control, Handshaking.

Instruction Formats, Op Codes Mnemonics, Data Transfer, Arithmetic, Branch, Loop, Logical Shift and Rotate Instructions, String Instructions and Text Processing.

Text Books:

1. M. M. Mano, Digital Logic and Computer Design, PHL.
2. M.M.Mano, Computer System Architecture, PHL.
3. William Stallings, Computer Organization And Architecture: Designing For Performance, Prentice Hall, 2005.

Reference Books:

1. M.M.Mano, Digital Design, Pearson Education.
2. Malvino, Leach, Digital Principles and Applications, McGraw-Hill.

SEMESTER-II

Paper: H2

Subject: PC Software Lab (Practical)

Marks: 40

- Word Processing Software
- Spread Sheet
- Presentation Software
- DBMS Software
- Windows based System
- Graphics Software

SEMESTER-III

Paper: H3

Subject: Data and File Structures (Theory)

Marks: 60 (48 + Internal-12)

The detailed syllabus will be framed in the next meeting of Board of Under Graduate Studies.

SEMESTER-III

Paper: H3

Subject: Computer Programming Laboratory using C (Practical)

Marks: 40

The detailed syllabus will be framed in the next meeting of Board of Under Graduate Studies.

SEMESTER-IV

Paper: H4

Subject: Data base Management System (Theory)

Marks: 60 (48 + Internal-12)

The detailed syllabus will be framed in the next meeting of Board of Under Graduate Studies.

SEMESTER-IV

Paper: H4

Subject: Data base Management System Laboratory (Practical)

Marks: 40

The detailed syllabus will be framed in the next meeting of Board of Under Graduate Studies.