

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
Syllabus for B. Tech in Computer Science & Engineering
(Applicable from the academic session 2018-2019)

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| Subject Code : PCC-CS 302 | Category: Professional Core course |
| Subject Name : computer Organisation | Semester : Third |
| L-T-P : 3-0-0 | Credit: 3 |
| Pre-Requisites: No-prerequisite | |

Course Content:

Module - 1:[8L]

Basic organization of the stored program computer and operation sequence for execution of a program. Role of operating systems and compiler/assembler. Fetch, decode and execute cycle, Concept of operator, operand, registers and storage, Instruction format. Instruction sets and addressing modes. [7L]

Commonly used number systems. Fixed and floating point representation of numbers. [1L]

Module - 2:[8L]

Overflow and underflow. Design of adders - ripple carry and carry look ahead principles. [3L]

Design of ALU. [1L]

Fixed point multiplication -Booth's algorithm. [1L]

Fixed point division - Restoring and non-restoring algorithms. [2L]

Floating point - IEEE 754 standard. [1L]

Module - 3: [10L]

Memory unit design with special emphasis on implementation of CPU-memory interfacing. [2L]

Memory organization, static and dynamic memory, memory hierarchy, associative memory. [3L]

Cache memory, Virtual memory. Data path design for read/write access. [5L]

Module - 4: [10L]

Design of control unit - hardwired and microprogrammed control. [3L]

Introduction to instruction pipelining. [2L]

Introduction to RISC architectures. RISC vs CISC architectures. [2L]

I/O operations - Concept of handshaking, Polled I/O, interrupt and DMA. [3L]

Text Book:

1. Mano, M.M., "Computer System Architecture", PHI.
2. BehroozParhami" Computer Architecture", Oxford University Press

Reference Book:

1. Hayes J. P., "Computer Architecture & Organisation", McGraw Hill,
2. Hamacher, "Computer Organisation", McGraw Hill,
3. N. senthil Kumar, M. Saravanan, S. Jeevananthan, "Microprocessors and Microcontrollers" OUP
4. Chaudhuri P. Pal, "Computer Organisation & Design", PHI,
5. P N Basu- "Computer Organization & Architecture" ,Vikas Pub