IT209  Computer Organization (3-0-3-4.5)

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Learning objectives: To understand what is going inside a computer system through a bottom-up approach. Computer system is a fine interconnection of different parts; course will introduce simple parts and build an interconnected structure from them to understand the functioning of computer system.

Topics:
- Logic Functions and Gates
- Sequential and combinational circuits
- Basic component of Computer CPU, memory, Input /Output, Von Neumann model
- CPU micro architecture
- Instruction set architecture
- Assembly language
- Input / Output (I/O)
- Trap and subroutine calls
- Debugging

Lab component: Practical will be based on theory covered in the class.
- Analysis and design of combinational and sequential circuits.
- Study of ALU and memory.
- Use of digital logic simulator.
- Use of Micro architecture simulator.
- Programming based on the assembly language.

Evaluation mechanism:
Mid semester exam I - 10%
Mid semester exam II - 15%
End semester exam – 25%
Lab Sessions: 20%
Assignments/Quiz/Take home exams: 30%

Text:

References:
1. Structured computer organization by Andrew Tanenbaum 5/e, Pearson Prentice Hall.
3. The Essentials of Computer Organization and Architecture, Linda Null and Julia Lobur, Jones and Bartlett.
4. IBM PC Assembly language and Programming, 5/e, Peter Abel, Pearson Education LPE (For lab sessions).

Course webpage at http://courses.daiict.ac.in//course/view.php?id=134