

CDA 4102 Structured Computer Architecture

Credits: 3

Text book, title, author, and year: *Structured Computer Organization (6th ed.)* by Andrew S. Tanenbaum, 2012.

- a. **Supplemental materials:** MSDN documentation on inline assembler (online).

Specific course information

- a. **Catalog description:** A multilevel approach to computer architecture: microarchitecture level, instruction set architecture level, and operating system level. Introduction to parallel computer architectures and assembly language.
- b. **Prerequisites:** CDA 3201C
- c. **Required, elective, or selected elective:** Selected elective

Specific goals for the course

- a. **Specific outcomes of instruction:** Students should be able to understand and explain the concepts of modern computer system architecture; be able to identify implemented architecture and troubleshoot the problems; familiarize with machine level language and relationship with higher level programming languages; ability to design simple architecture units.

Brief list of topics to be covered

1. Introduction and historical notes on computer architecture
2. Processors
3. Gates and Boolean Algebra
4. Microarchitecture
5. ISA Level
6. Virtual Memory
7. Assembly Language
8. On-Chip Parallelism