

## **CDA 3331 - Introduction to Microprocessors**

**Description:** CDA 3331: Introduction to Microprocessors. Credits 4. The architecture of a 32-bit microprocessor. Instruction set. Assembly language programming. Program design, hardware model, and exception handling and interfacing to memory and peripherals. Subroutines, timing and execution time measurement. Includes the laboratory assignments. Prerequisites: CDA 3201.

**Textbook:** James L. Antonakos, The 68000 Microprocessor, Prentice-Hall.

**Instructor:** Borko Furht, Professor of CSE

**Goals:** This course is designed to give undergraduates in computer and electrical engineering the understanding of the hardware and software architecture of a microprocessor, the principles of assembly language programming, and microprocessor interfacing to memory and I/O peripherals.

**Prerequisites by topic:**

1. Logic design
2. Fundamentals of computers
3. Programming in a high-level language (C or Pascal)

**Topics:**

1. Introduction to microprocessors
2. Overview of Motorola 68000 family of processors
3. Addressing modes
4. Basic instruction set
5. Subroutines
6. Timing and delay routines
7. Exception handling and interrupt processing
8. I/O system and programming
9. Interfacing memory and I/O components
10. Advanced microprocessor programming

**Computer usage:** Homework assignments: using of MC68000 simulation package on PCs - writing, assembling, debugging, testing, and executing programs. Lab projects.

<b>Grading Format:</b> Homeworks (3)	10%
Tests (2: 20%, 20%)	40%
Laboratory assignments	20%
Final exam	30%
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TOTAL	100%