

Microprocessors Systems

- **Course number and name:**
CC 421 – Microprocessor Systems
- **Credits and contact hours**
Credits Hours: 3Hrs
Contact Hours: In Lecture 2Hrs, In Tutorial 2Hrs, and In Lab 2Hrs
- **Instructor’s or course coordinator’s name**
Coordinator Name: Prof. Dr. Ahmed Fahmy
- **Text book, title, author, and year**
 - Muhammad Ali Mazidi, Janice Gillispie Mazidi “80x86 IBM PC and compatible computers”, Fourth Edition, Prentice Hall, 2003
- **Specific course information**
 - a. **Catalog description**
Microprocessors and microcomputers. Microcomputer structure: microprocessor, memory, busses (synchronous and asynchronous) and I/O). 16/32-bit microprocessor architecture: Instruction cycle, microinstructions, micro-programming, instruction decoding, Reduced Instruction Set computer (RISC) architecture, Complex Instruction Set computer (CISC) architecture. Memory (RAM, ROM, memory mapping of I/O. I/O (parallel and serial I/O interfaces, system clock, clock phases and bit rates). Interrupts (types, handling of interrupts). Software aids (text editors and assemblers, linkers and macro-assemblers).
 - b. **prerequisites or co-requisites**
Prerequisites: CC311
 - c. **Type of the course (required, elective, or selected elective course) in the program**
Required Course
- **Specific goals for the course**
 - a. **Specific outcomes of instruction**
After the completion of this course the students will be able to:

	Course Learning Outcomes	SO
1	Identify The Microprocessors Category and study the internal structure and external connections of an example microprocessor (Intel 80386).	B,C
2	Study the Intel 80386 microprocessor, its connected peripherals, and its assembly language format.	C,I

Topics to be covered

- Introduction to microprocessors historical background
- 80386 Microprocessor architecture
- Real mode software model
- Addressing modes
- The instruction set & Machine Language coding
- Protected mode Architecture Model
- Virtual memory Management
- Memory Interface
- 80x86 interrupts, Arithmetic and Logical instructions
- Sample programs, BIOS and DOS programming
- Macros and Procedures
- Memory Organization and I/O interface circuits Input/output interface
- Interrupts and exception processing