

## Micro-Computer Based Design

- **Course number and name:**  
CC 521 – Micro-Computer Based Design
- **Credits and contact hours**  
Credits Hours: 3Hrs  
Contact Hours: In Lecture 2Hrs, and In Tutorial 1Hrs
- **Instructor’s or course coordinator’s name**  
Coordinator Name: Prof. Dr. Ahmed Fahmy
- **Text book, title, author, and year**
  - Design with PIC Microcontrollers, John B. Peatman , Prentice Hall ,1998
  - Microprocessors and Microcomputer Based System design, Mohamed Rafiquzzaman , CRC Pr Llc , 1995
- **Specific course information**
  - a. **Catalog description**  
Microprocessors - Micro-controllers - Embedded systems. Design and plan micro-based systems - Hardware interfacing – ADC – DAC - Serial communication - Control circuits.
  - b. **prerequisites or co-requisites**  
Prerequisites: CC415
  - c. **Types of Course ( required, elective, or selected elective course) in the program**  
Elective 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	Teach student how to design a system of input and output devices and control it using a micro controller.	F,J
2	Understand how to design and implement a microcomputer based system.	C,J

## **Topics to be covered**

- Introduction to Microcontrollers
- Programming micro controllers using assembly language
- Programming microcontrollers using C
- Embedded system design consideration
- Embedded system design steps
- Interfacing with keypad
- Interfacing with 7-segment display
- Interfacing with ADC and DAC
- Dealing with serial communication
- Design of final project
- Design tools II