

# COLLEGE OF ELECTRICAL AND MECHANICAL ENGINEERING NATIONAL UNIVERSITY OF SCIENCES AND TECHNOLOGY

**Title : EC 106 Computer Organization**

**Credits : 3 (2,1)**

Goals: This course is designed to introduce basic concepts of computer architecture and organization. The course will be covered in two parts; lectures and lab practicals. During lectures the theoretical concepts of computer organization will be discussed whereas practical handling of computer components, hardware installation and configuration, software installation and computer usage will be covered during lab periods. Detail of the topics is given below:

**Text book: Structured Computer Organization**

*By Andrew s. Tanenbaum*

**Reference books: Computer Organization** *By Lavadas and Ward*

**Computer Organization** *By Carl Hamacher, Zvonko Vranesic and Sawat Zaky*

**Computer Essentials** *By Hutchinson and Sawyer*

**Logic and Computer Design Fundamentals** *By M. Morris Mano and Charles R. Kime, 2nd or later edition.*

**Digital Fundamentals** *By Floyd Edition.*

**Digital Computer Electronics** *By Malvino*

**Digital Principles and Applications** *By Malvino*

## **Theory Topics**

- Introduction to computers : 6 hours
- Number systems : 6 hours
- Logic gates and digital Components : 6 hours
- Central processing unit organization : 4 hours
- Instruction sets and addressing modes : 2 hours
- Main memory organization : 5 hours
- Secondary storage organization : 5 hours
- Input/Output devices interaction/organization : 2 hours
- Computer communications : 2 hours

## **Practical/Lab**

3 hours Lab work per week is carried out by the students in the computer lab.

Following practicals are included:-

- Introduction to MS DOS and MS Office
- Computer assembling/disassembling and parts identification
- Hard disk/Floppy disk drive/CD-ROM Drive removal/installation

- Disk partitioning and installation of Windows operating system.
- Introduction to MS DOS (internal and external) commands
  
- Installation and usage of Microsoft Office and other utility programmes
- Configuring a PC
- Installation and usage of Scanner, CD-writer, and Printer.
- Establishing a small network of computers

**Tests/Exams:**

Class test #1: 14%

Class test #2: 14%

Quizzes: 8%

Assignments: 8%

Labs 16%

Final test: 40%