**Hashemite University**
**College of Engineering**
**Department of Computer Engineering**

# Microprocessor Lab.

**(1 Credit Hours/Dept. Compulsory)**

**Course Description:**

This lab gives the student an understanding of both software and hardware aspects of an 8086/8088 microprocessors, including its structure, operation, and control, then learn more about assembly language programming and techniques using different tools and utilities such as MTS-8088 Kits,DOSBox 0.74 , Debug, and Emu 8086 software. Finally developing a project based on assembly and microprocessors then testing it for a real life applications.

**Exp1: (Review of the System Commands and Assembly Instruction Set)**
This lab to familiar with the software structure of MTS-8088 kit, and to utilize and apply the system commands of MTS-8088 system, and calculate the physical address of storage locations in the memory address space, and to assemble instructions into the memory and Disassemble machine code stored in memory.

**Exp2: (Developing Assembly Language Programs and Executing using Emu8086 and MASM)**
The objective of this lab Assemble and execute instructions into the memory using Emu8086 and Learn how to write assembly programs using simplified and full segment definitions.

**Exp3: (Programming Techniques)**
Learn how to define subroutines and define macros by coding its definition directives, write assembly language instructions to invoke macros, learn how to make libraries and use it.

**Exp4: (BIOS Interrupts Programming)**
To become familiar with the BIOS interrupts of the 8086/88 processor.

**Exp5: (DOS & Mouse Interrupts Programming)**
To become familiar with the DOS interrupts of the 8086/88 processor and mouse interrupts.

**Exp6: (Parallel Data Input/output)**
This experiment to understand the decoding circuit that is implemented for the 8088 input and output subsystems, and to know how to download assembly program from PC to the MTS-8088 kit,

using serial communication port RS232, and Programming the 8255 Programmable Peripheral Interface.

**Exp7**: **(I/O Applications: Dynamic Display)**
Implement wider applications on the I/O ports of the Microprocessor.

**Exp8**: **(LCD & Keypad Interrupts)**
To study and practice the use of various types of software interrupts, and to use interrupts to write a simple and real application.

**Exp9**: **(Design and conduct and experiment)**
To design an experiment

**Exp10: (Project)**