MICROPROCESSOR LAB

CONTENTS

LIST OF EXPERIMENTS

Introduction

The course aims at offering opportunity to students to realize the functioning of a microprocessor (8085) and it's supporting PPIs. In this laboratory, students are expected to get hands-on exposure/experience of using a microprocessor based development system that allows students to learn about the approach/process for development of software to implement a task. Such experimentation ensures enhancement of logical and technical skills of a student in the filed of software development of a programmable device.

Student Responsibilities:

The student is expected to be prepared for each experiment. Laboratory preparation includes reading the laboratory experiment and related textbook material. Students are expected to have active participation in the laboratory activities. The student is expected to ask the teaching assistant any questions he/she may have. DO NOT MAKE COSTLY MISTAKES BECAUSE YOU DID NOT ASK A SIMPLE QUESTION. Students should emphasize on understanding the concepts and procedure of each lab for successful completion of the laboratory. The student should remain alert and use common sense while performing a lab experiment. He/she is also responsible for keeping a professional and accurate record of the lab experiments in a laboratory notebook.

Laboratory Teaching Assistant Responsibilities:

The LTA shall provide the students with a syllabus and over view of the experimental process to be carried out on a microprocessor based development system. The syllabus shall include the LTA's office hours, telephone number, and the name of the faculty coordinator. The LTA is responsible for insuring that all the necessary equipment and/or preparations for the lab are available and in working condition. The Laboratory Teaching Assistant (LTA) shall be completely familiar with each experiment prior to class. LAB EXPERIMENTS SHOULD BE CHECKED IN ADVANCE TO MAKE SURE EVERYTHING IS IN WORKING ORDER. The LTA should supervise the students, while performing the lab experiments. The LTA is expected to examine and grade the laboratory reports in a fair and timely manner. The reports should be returned to the students in the next laboratory period following submission. The LTA should report any errors in the lab manual to the faculty coordinator.

Faculty Coordinator Responsibilities:

The faculty coordinator should insure that the laboratory is properly equipped, i.e., that the teaching assistants receive any equipment necessary to perform the experiments. The coordinator is responsible for supervising the teaching assistants and resolving any questions or problems that are identified by the teaching assistants or the students. The coordinator may supervise the format of the final exam for the lab. He/she is also responsible for making any necessary corrections to this manual. The faculty coordinator is responsible for ensuring that the manual is continually updated.

Lab Policy and Grading:

The student should understand the following policies:

ATTENDANCE:

Attendance is mandatory and any absence must be for a valid excuse and must be documented. In case of prior knowledge of absence from class by the student, proper approval in due format must be taken from the Head of the Department. A copy of the approved leave application must be submitted to the TA/ faculty in charge of the laboratory.

LAB RECORDS:

The student must:

1. Always carry a rough note copy to record the results of the experiments.

2. Keep all work in preparation of and obtained during lab in an approved format of the department ; and

3. Prepare a lab report on performed experiments.

GRADING POLICY:

The final grade of this course is determined using the following criterion:

Laboratory notebook and in-class work along with attendance: 30%

Lab reports: 30 %

Final Assessment: 40% (To be decided by the course instructor Practical/Laboratory assignment of mini project or viva or combination of the above)

In-class work, laboratory notebook and attendance will be determined by the teaching assistant, who, at his/her discretion may use evaluations to aid in this decision. The final exam should contain a written part along with practical (physical operations) and followed up by a viva-voce.

Course Goals and Objectives:

The course is designed to allow students to develop logical and technical skill in the field embedded system engineering. In addition, the student should learn the impotence of proper documentation of software for future use. More explicitly, the class objectives are:

1) To gain exposure/experience in the use of a microprocessor based development system.

2) To enhance understanding of functioning of a microprocessor (8085) and it's supporting PPIs.

a) Instructions of microprocessor (8085)

b) Translation of a given task into an algorithm

c) Translation of an algorithm into Assembly language software

d) Translation of Assembly language software into codes/data for execution of a given task

e) Verification of the out comes of the program execution.

f) Develop alternative software to realize the same task