CMPE 310: Systems Design and Programming

Course:

CMPE 310: Systems Design and Programming.
Sections 0101, 0102 and 0103.
Spring 2004. 4 credits.

Course Instructors:

Chintan Patel, Lecturer, Computer Science & Electrical Engineering
Office: ITE 322, Telephone: 410-455-3963
Email: cpatel2@csee.umbc.edu
Home Page: http://www.cs.umbc.edu/~cpatel2/
Office Hours: M&W 11:00-12:30pm or by appointment
Teaching Assistants: Jitin Tharian
                    Pushkar Pulastya
                    Pei Huang
Office Hours: TBA.

Text:

Barry B. Brey, "The Intel Microprocessors, 8086/8088, 80186/80188, 80286, 80386, 80486, Pentium and Pentium Pro Processor, Pentium II, Pentium III and Pentium 4 Architecture, Programming and Interfacing" Sixth Edition, Prentice Hall (2003).

Supplementary texts:

Muhammad Ali Mazidi and Janice Gillispie Mazidi, "The 80x86 IBM PC and Compatible Computers (Volumes I&II), Assembly Language, Design, and Interfacing", Third Edition, Prentice Hall (2000).

John Uffenback, "The 80x86 Family, Design, Programming and Interfacing", Third Edition, Prentice Hall (2002).

Lab Supplementary Text:

Bob Neveln, "Linux Assembly Language Programming",Prentice Hall PTR (2000)

Course Description:

This course introduces Intel 80x86 assembly language and the basic architecture of the Intel microprocessor. We will discuss register architecture, segmentation and paging, hardware specs and support chipsets for the 8086 processor.There are two exams and labs will focus on assembly language programming projects.

Grading:

The distribution of weights for the exams, homeworks and projects is as follows:

Midterm	20%
Final	25%
Programming Projects/ Labs/ Homeworks	50%
Class Participation	5%

No incompletes will be given, except as required by university policy for truly exceptional circumstances. The final exam is cumulative. However, material covered after the second exam will be emphasized.

NOTE: Cheating at any time in this course will cause you to fail the course.
    Please refer to the guidelines on the next page.

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The following is taken from the UMBC Student Handbook:

DEFINITIONS OF ACADEMIC MISCONDUCT

Academic misconduct may include but is not limited to the following:
> Cheating: knowingly using or attempting to use unauthorized material, information, or study aids in any academic exercise.
> Fabrication: Intentional and unauthorized falsification or invention of any information or citation in an academic exercise.
> Facilitating Academic Dishonesty: Intentionally or knowingly helping or attempting to help another commit an act of academic dishonesty.
> Plagiarism: Knowingly representing the words or ideas of another as one's own in any academic exercise, including works of art and computer-generated information/images.

POLICY FOR RESOLVING CASES OF ACADEMIC MISCONDUCT

Individual faculty members have the right and responsibility to deal directly with any cases of academic misconduct which arise in their courses. Instances of academic misconduct may be identified in one of two ways. If a faculty member believes a student has committed an act of academic misconduct--for example, by direct observation of student behavior, by comparing the contents of an assignment with that submitted by another student, or by reviewing notated sources or references--the faculty member, in consultation with the Chair of the Academic Conduct Committee, will assess the student's alleged misconduct and the faculty member's options. If a student believes that academic misconduct has occurred, the student will notify either the faculty member or the Chair of the Academic Conduct Committee.

It is particularly important that the Chair of the Academic Conduct Committee be consulted. The Chair can provide knowledge and insight for the faculty member. Communication of instances of academic misconduct also protects the integrity of the university by providing a means of recording infractions that may be repeated by a particular student, or which may prove endemic to a particular course or department. Consultation with the Chair of the Academic Conduct Committee provides a formal record of the infraction and resolution, protecting the student, professor, and university should any questions later arise.
> The student will have the opportunity to respond to an accusation of academic misconduct.

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Tentative Course Outline:

Date	Topic
Week1	Introduction
Week1	Intel Microprocessor History and Overview
Week2	Intel Architecture Basics
Week2	OS Fundamentals
Week3	Intel Register Architecture: Basics
Week3	Segmentation and Paging
Week4	Advanced topics
Week4	8086/8088 Hardware Specs
Week5	8086/8088 Hardware Specs
Week5	Bus Timing
Week6	Bus Timing
Week6	Memory Interface
Week7	Memory Interface
Week7	Memory Interface
Week8	Spring Break
Week8	Spring Break
Week9	Memory Interface
Week9	Midterm exam
Week10	Basic I/O
Week10	Basic I/O
Week11	Basic I/O
Week11	Basic I/O
Week12	Interrupts
Week12	Interrupts
Week13	Direct Memory Access
Week13	Direct Memory Access
Week14	Disk Storage and Video
Week14	Disk Storage and Video
Week15	Bus Interface
Week15	Bus Interface
	Final Exam Week

(Note: Changes/Additions to this schedule will be posted on my website
http://www.cs.umbc.edu/~cpatel2/)