CS-3280/ECE-3280 Computer Organization & Assembly Language

Syllabus (SP 22)

Class Hours:
MWF 1:00 PM - 1:50 PM, Room: Naka 116

Instructor:
Michael Jurczyk , Room 121 Naka, Phone 884-8869, Email Address: jurczykm@missouri.edu

Office hours:
The TA's office hours are posted on Canvas.

Prerequisite:
CS-2270 Logic Design, or ECE 1210 Logic Systems.

Textbook:

Required: *None*

Recommended: *Microcomputer Engineering, Gene H. Miller, Prentice Hall, 3rd Edition, 2004*

Course Outline:
This course is an introduction to the organization and programming of microcomputers. Topics covered include:

- Organization of microcomputers
    - Computer architecture
    - RISC vs. CISC
    - SISD/SIMD/MIMD
    - Pipelining
- Computer operation
- Microprocessor programming
    - Instruction format and execution
    - Instruction set and addressing modes
    - Structured assembly language program design
    - Subroutines, parameter passing, local variables
- Intel IA-32 History
- Interfacing
    - I/O
    - Polling
    - Interrupt
    - DMA
    - Buses/PCI
- Memory Systems
    - Memory Types
    - Cache
- Virtual Memory

Homework and Laboratory Policies:
Written homework will be assigned throughout the semester. All homework will be submitted electronically via Canvas and are due before 1:00 PM on the due date. It is your responsibility to keep track of assignments and their due dates. **Homework cannot be accepted late.**

You will be required to write several assembly language programs over the course of the semester. You will test the programs using an IDE which we will provide. This IDE (Wookie) is a Windows program and it is installed on the computers in the Lafferre Technology Commons, Lafferre C1249, and in the Naka 142 labs. It is also accessible through "Software Anywhere" (https://doit.missouri.edu/services/software/software-anywhere/).

All programming work will be submitted electronically via Canvas to be run and graded. Assignments are due before 1:00 PM on the due date. Assignments can be submitted up to 24 hours late with penalty: for lab assignments electronically submitted between 1:00 PM of the due date and 12:59 PM on the next day, 10% of the possible score will be deducted. Assignments submitted thereafter will receive 0 points. **NO EXCEPTIONS!**

Since the correct results will be known in advance for each programming problem, it is important that you persevere until your programs execute correctly. Little credit will be given for a program which does not work properly. Although results are important, the manner in which they are obtained is also important. Therefore, a program which produces the correct results will not be graded as correct if the results are obtained in an unacceptable manner.

Canvas Submissions:
As stated above, homework and lab assignments have to be submitted electronically via Canvas. It is the student's responsibility to double-check their submission before the deadline to ensure that the correct file was uploaded. We will grade what has been submitted, not what a student intended to submit.

Lectures:
The lectures in this course are an important way to impart to students the concepts and skills to be gained in this course. It is expected that all students attend all lectures unless a grievous emergency occurs.

Exams:
There will be two exams during the semester (NO final exam). Exam 1 is tentatively scheduled for Wednesday, March 9, during class. Exam 2 is tentatively scheduled for Monday, May 2, during class. Both exams will be held in the class room. All exams are closed-note.

Students who need to self-quarantine or are sick
Students who need to self-quarantine or are sick need to first contact the instructor and provide evidence of their situation. An individual plan will then be developed with the student on how to handle assignments, etc.

Grading:
Homework --------------------> 25%
Laboratory Assignments ----> 25%
Exam 1 ------------------------> 25%
Exam 2 ------------------------> 25%

Your final score for the course will be curved to derive your final letter grade.

Makeup Exams:
For those having verified reasons to be absent during an exam, makeup exams will be arranged on an individual basis. Please contact the instructor at least 1 week prior to the scheduled test date, as it will not be possible to schedule a makeup "after the fact".

Incompletes:
A grade of 'I' will be given only for cases in which there are documented medical problems or family emergencies.

Abuses of Trust:
Academic integrity is fundamental to the activities and principles of a university. All members of the academic community must be confident that each person's work has been responsibly and honorably acquired, developed, and presented. Any effort to gain an advantage not given to all students is dishonest whether or not the effort is successful. The academic community regards breaches of the academic integrity rules as extremely serious matters. Sanctions for such a breach may include academic sanctions from the instructor, including failing the course for any violation, to disciplinary sanctions ranging from probation to expulsion. When in doubt about plagiarism, paraphrasing, quoting, collaboration, or any other form of cheating, consult the course instructor. See the information online at https://oai.missouri.edu/students/.

Duplicate homework/lab written in collaboration with others is NOT acceptable. Although it is permissible to discuss the homework/lab with others, these discussions should be of a general nature. **All work at a detailed level must be done on your own (e.g., when you get to the specifics of designing and writing code for the labs, you are to do it yourself)**. Students submitting the same or similar solutions to a homework or lab or a student who submits a lab downloaded off the Internet (or obtained from other sources including a compiler) will be considered as having cheated. Any evidence of cheating, copying or collusion, plagiarism, etc., will be graded as zero for all students involved and will be referred to both the department chair and the Provost for other disciplinary action.

Students with Disabilities:
If you anticipate barriers related to the format or requirements of this course, if you have emergency medical information to share with me, or if you need to make arrangements in case the building must be evacuated, please let me know as soon as possible.

If disability related accommodations are necessary (for example, a note taker, extended time on exams, captioning), please register with the Disability Center (http://disabilitycenter.missouri.edu), S5 Memorial Union, 573- 882-4696, and then notify me of your eligibility for reasonable accommodations. For other MU resources for persons with disabilities, click on "Disability Resources" on the MU homepage.

Lecture Recording:
University of Missouri System Executive Order No. 38 lays out principles regarding the sanctity of classroom discussions at the university. The policy is described fully in section 200.015 of the Collected Rules and Regulations. In this class, students may not make audio or video recordings of course activity, except students permitted to record as an accommodation under section 240.040 of the Collected Rules. All other students who record and/or distribute audio or video recordings of class activity are subject to discipline in accordance with provisions of section 200.020 of the Collected Rules and Regulations of the University of Missouri pertaining to student conduct matters.

Those students who are permitted to record are not permitted to redistribute audio or video recordings of statements or comments from the course to individuals who are not students in the course without the express permission of the faculty member and of any students who are recorded. Students found to have violated this policy are subject to discipline in accordance with provisions of section 200.020 of the Collected Rules and Regulations of the University of Missouri pertaining to student conduct matters.