Introduction to Computer Organization and Assembly Language Programming
CSCI 250
Fall 2012

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And open door policy

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Course Description: An introduction to an assembly language and its implementation in hardware. Topics include the binary and hexadecimal numbering systems, the fetch-execute cycle, the components of the central processing unit, floating point processing, memory, the assembler, and the linker. Programming exercises are developed in the assembly language of a commonly available processor.


Course (learning) outcomes:
1. Be familiar with the basic organization of a computer system, and understand the basic operation and terminology associated with various components (the CPU, memory organization, disk drives, and various IO devices).
2. Be familiar with the basic architecture of modern processors, and to make objective comparisons to different types of architectures such as RISC and CISC, clusters, etc. based on performance measures.
3. Express numbers in the decimal, binary, and hexadecimal number systems and convert numbers between those systems. The student should also be able to describe the implementation of two’s complement number representation on typical machines.
4. Describe typical methods used to encode standard data types so that they may be stored and manipulated at the machine level.
5. Demonstrate methods of accessing information in machine memory using direct or indirect addressing schemes, and describe various memory management schemes such as virtual memory.
6. Write correct assembly-language programs (MIPS) for simple tasks.
7. Understand the mapping from basic high-level source code features such as while loop, if statements, and arrays to assembly language.

Prerequisite: CSCI 220 and 220L. Prerequisite or Co-requisite: MATH 207.

Course Web Page: http://tinyurl.com/8e2en93

Homework Policy: Homework assignments in the form of programming tasks will be distributed throughout the semester to assist in test preparation and material synthesis. See schedule for specific dates.

Exam Policy: Student performance will be assessed through two quizzes, one midterm, and one comprehensive final exam, as indicated on the course schedule.
Grading Policy:
1. Quiz #1  5%
2. Quiz #2  5%
3. Midterm  30%
4. Comprehensive Final  30%
5. Programming Assignments  30%

Grading Scale:  A: 90-100; B: 80-89; C: 70-79; D: 65-69; F: <65. Plusses and minuses will be used at the discretion of the instructor.

Cheating:  Students are expected to work independently in this course. Collaborations on specific assignment details are a violation of the honor code. Use of another student's answers is considered cheating, and cases of this nature will be taken to the Judicial Board.

Attendance Policy:  Attendance at all lectures is required. Excused absences for illness, personal/family emergency or academic/professional commitments will be granted at the discretion of instructor.

Disability Accommodation:  Any student who feels that he or she may need an accommodation due to a disability should speak to me individually to discuss your specific needs. For additional help please contact the College of Charleston Center for Disability services at http://www.cofc.edu/~cds/.

Electronics Devices:  The use of electronic devices, both stand-alone and network capable, will play an increasingly important roll in teaching and learning at the College of Charleston, including their use in our classrooms. The following policy specifies which electronic devices and network connections can be used and when their use is disallowed in this class.

Devices that are allowed to be used at certain times:

During class, except during tests and exams:
Allowed are mobile computing devices, e.g. laptops, palmtops, tablets, electronic pens, calculators. Mute the sound. The use of these devices is encouraged for accessing WebCT, taking notes and running simulations during class.

During tests, exams and quizzes:
No electronic devices are allowed to be powered up, unless otherwise specified by the instructor. All books and notes are to be stowed below desk level.

Network Access:
Students may use wired, WiFi and IR networks available during class, whenever electronic devices are allowed, provided the use of the network does not distract other students or the instructor.

Be considerate and sensitive to others. All student behaviors are subject to the policies in the College of Charleston Student Handbook.