Welcome to CS 271 …

Computer Architecture and Assembly Language (4 credit hours)

What CS 271 is about: The theme of CS 271 is "How Computers Work". We will look at some theoretical and architectural features common to all computers, and then delve into a specific architecture. We will use that architecture's assembly language as a tool for understanding what really goes on inside a computer. Along the way, we will learn how electronic circuits enable computer operations, how certain peripheral devices work, and how research is improving speed, capacity, parallelism, and the leading edge of computer architecture.

The university catalog description for CS 271 is:
Introduction to functional organization and operation of digital computers. Coverage of assembly language; addressing, stacks, argument passing, arithmetic operations, decisions, macros, modularization, linkers and debuggers.

What you are expected to know before starting CS 271: Prerequisites are CS 161 (or dept. approval). You should be able to:

- design an algorithm and write a high-level language program from a given problem description
- construct / evaluate conditional and arithmetic expressions
- implement decision and repetition control in a program
- modularize a solution; implement procedures (functions, methods), procedure calls, and parameter passing
- test / debug program source code
- represent non-negative integer values using the binary number system
- think logically and support your answers and ideas

What you will need in order to complete assignments in CS 271: Required software is available for free download. It doesn't matter if you are using a Mac or a PC; we will help you get set up.

- an Internet connection with a computer that can run or emulate Windows 7 or Windows XP.
- Visual Studio 2015 (Enterprise) or 2010
- a library of MASM input/output procedures (available from http://www.asmirvine.com)
- a word processor and a PDF reader

How your CS 271 coursework will be evaluated: Various activities will be evaluated, see the syllabus for grading information.

Additional Resources: These resources will be helpful during various parts of the CS 271 course:

- Textbook website
- Appendix B in the textbook
- The x86 Instruction Set References (Full List HERE or use individual links below)
  - A-L
  - M-U
  - V-Z