Course No: CS 271

Course Credit: 4.0

Lecture Hrs/wk: 3

Lab Hrs/Wk:

Lecture/Lab Hrs/Wk: 2

Practicum Hrs/Wk:

Clock Hours: 55

Length of Course: 11 weeks

Banner enforced Prerequisite: CS 162 or instructor approval

Instructor enforced Prerequisite:

Co-Requisite:

Load Factor: 4.4

Activity Code: 100 Lower Division Collegiate

CIPS: 11.0701

Course Title: Computer Architecture & Assembly Language

Developed By**:** Dale Bryson

Development Date: December 1999

Revision Date: October 10, 2014

Review Date: N/A

COURSE DESCRIPTION:

This course serves as an introduction to the functional organization and operation of digital computers. Coverage of topics includes assembly language; addressing, stacks, argument passing, arithmetic operations, decisions, macros, modularization, linkers and debuggers.

COURSE OUTCOMES:

* Identify the major components of CISC and RISC architectures, and explain their purposes and interactions. (ABET Outcome I)
* Simulate the internal representation of data, and show how data is stored and accessed in memory. (ABET Outcome A)
* Explain the relationships between a hardware architecture and its instruction set, and simulate micro-programs. (ABET Outcomes A, I)
* Explain the Instruction Execution Cycle. (ABET Outcomes A, I)
* Explain the differences among high-level, assembly, and machine languages. (ABET Outcomes A, I)
* Write well-modularized computer programs in an assembly language, implementing decision, repetition, and procedures. (ABET Outcomes A, I)
* Use a debugger, and explain register contents. (ABET Outcomes I)
* Explain how the system stack is used for procedure calls and parameter passing. (ABET Outcomes A, I)
* Explain how editors, assemblers, linkers, and operating systems enable computer programming. (ABET Outcome I)
* Explain various mechanisms for implementing parallelism in hardware/software. (ABET Outcome I)