

Syllabus

Term: Spring 2015



Course

Title: CSCS2650, Computer Organization

Catalog Description: Computer architecture and assembly language programming methods. Includes addressing, binary and computer arithmetic, boolean logic, bus structures, control and data flow, data representation, debugging, input/output, instruction cycle, instruction sets, interrupts, linking, machine language, memory, processors, registers, storage, subroutines, and translation. Connection to compilers and operating systems discussed. (4 cr. hrs.) (Spring). Prerequisite: CSCS 1320, CSCS 2420 or instructor consent. Lecture/laboratory. Shelf Life Alert.

Classes: -001, CRN 17277, MWF 12:55pm – 1:50pm, C108, Jan 20 – May 17
-071, CRN 17813, F 2:00pm – 2:50pm, C108, Jan 20 – May 17

Textbook

The Elements Of Computing Systems *Nisan, Noam*
ISBN 978-0-262-64068-8 Copyright 08 Edition 1
How Computers Work Processors & Main Memory *Roger Young*
ISBN 978-1-4421-1398-5 Copyright 09 Edition 2

Instructor

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Wednesday 12pm - 1pm, 2pm - 3:30pm
Friday 12pm - 1pm

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Learning Outcomes

- Students shall design a simplified microprocessor architecture.
- Students shall be able to explain the datapath of modern processors..
- Students shall be able to demonstrate the functions of typical ALUs..
- Students shall be able to demonstrate instruction encoding/decoding.
- Students shall be able to utilize various memory addressing modes.

Projects (all projects must include usage documentation)

Project	Requirements
CPU simulator	<p>There is one large project for this course that is the culmination of work begun in CSCI1240 and extended in other courses. The result is a working virtual model of a CPU constructed from only NOT, AND, and OR functions. Features include</p> <ul style="list-style-type: none"><input type="checkbox"/> memory array<input type="checkbox"/> special purpose and general purpose registers<input type="checkbox"/> fetch, decode, and execute cycle<input type="checkbox"/> instruction set design<input type="checkbox"/> ALU design<input type="checkbox"/> bussing<input type="checkbox"/> address modes<input type="checkbox"/> datapath

Policies

Cell-free classroom and office: Voice and text cellular usage is prohibited in my classroom and office. It is strongly preferred that you turn such devices off. If this is not possible, then devices must be in a silent mode. If you feel that you must use the device for any reason, excuse yourself from the room. While exiting is a distraction, it is slightly preferable to the distraction of in-room usage. Policy violations are factors in grading.

Computer/Internet usage: While it is my general policy to let other students use available computers during my classes, it is expected that students enrolled in the course are actively participating in the course. Therefore, during class time computer usage should be reserved for class activities. Misuse, according to my judgment, is a factor in grading. **Class time is for presentation and discussion; not for writing code. There is expected time outside of class hours for writing code.**

Class cancellation: Class cancellations by the instructor will be posted via an announcement sent directly to your student email account. Cancellations due to inclement weather will be posted on the CCC website and the main page of MyCCC. It is the student's responsibility to check these sources on a regular basis.

Attendance is mandatory: To receive credit for attendance, students must sign the course attendance book each class. Repeated tardiness will be considered absence. Absence and tardiness is a factor in grading.

Students with Disability Information: Students with learning, physical, or psychological disabilities who wish to receive accommodations for this course must contact the Office of Student Disability Services in Room M152 in the Commons Building on the Spencer Hill Campus at 607-962-9262) or at sds@corning-cc.edu. Students are required to self-identify by making a formal request for services, and to provide current documentation that reflects the nature of the disability. Reasonable accommodations in the classroom will be provided for students with appropriately documented disabilities. Confidentiality will be maintained at all times.

Withdrawal: Students have 15 days to drop without a record of this course on their transcript, and they have through March 29 to drop with a W (no effect on GPA). Dropping must be performed by submitting an online drop request through MyCCC. It is the student's responsibility to drop the course if appropriate.

Office visits required: At least two office visits are required with one within the first two weeks of the course

and the second between the fourth and the ninth week of the course. Lack of office visits is a factor in grading.

Grading: Use the following excerpt in planning time for this (3 credit) course.

<http://www.highered.nysed.gov/ocue/aipr/Part50.htm>

Chapter II Regulations of the Commissioner

50.1 Definitions.

o. Semester hour means a credit, point, or other unit granted for the satisfactory completion of a course which requires at least 15 hours (of 50 minutes each) of instruction and at least 30 hours of supplementary assignments, except as otherwise provided pursuant to section 52.2(c)(4) of this Subchapter. This basic measure shall be adjusted proportionately to translate the value of other academic calendars and formats of study in relation to the credit granted for study during the two semesters that comprise an academic year.

For consistency, all grading is done on a letter grade scale as copied to the right from the College Catalog. If a student would like to know their grade at any time, they should schedule an appointment for a repository review (as often as they like). Repository content will be assessed according to the following rubric. Without a portfolio to review, the grade is automatically 'F'.

Grade	Criteria
A	consistently committing work all projects minimum requirements complete, accurate, and on time with additional features
B	one 5-day span without commits all projects minimum requirements complete, accurate, and on time or one project not meeting minimum requirements, but additional features implemented on others
C	two 5-day spans without commits two projects not meeting minimum requirements
D	three 5-day spans without commits three projects not meeting minimum requirements
F	Four, or more, 5-day spans without commits more than three projects not meeting minimum requirements