EECS 161 – Introduction to Programming I

Catalog Description: Overview of the fundamental concepts of computer science. Introduction to problem solving and software engineering. Includes algorithm design and program development.

Credits: 4  Terms Offered: All

Prerequisites: Enforced: MTH 111 or (MPT score >= 24)
Co-requisites: Enforced: MTH 112

Courses that require this as a prerequisite: EECS 162, CS 271

Structure: Three 50-minute lectures and one 110-minute lab per week

Instructors: Jennifer Parham-Mocello

Course Content:
- Identifiers and primitive data types
- Assignment, arithmetic, logical, and relational operators
- Expressions and statements
- Flow of control: selection, repetition, recursion
- Functions/parameter-passing including call-by-value and call-by-reference
- 1- and 2-dimensional arrays, strings, and other structured data types
- Pointers

Learning Resources: One or more of the following:
- Absolute C++, Savitch and Mock, Addison-Wesley
- C/C++ Programmer's Reference, Schildt, Osborne McGraw Hill
- Big C++, Horstmann and Budd, Wiley
- Programming and Problem Solving with C++ (5th edition), Dale/Weems
- Additional online resources.

Measurable Student Learning Outcomes:
At the completion of the course, students will be able to…
1. **Design and implement** programs that require
   a. various control statements involving selection and repetition
   b. expressions with variables, constants, function calls, pointers, and arithmetic-relational operators with mixed data
   c. arrays, strings, and other data structures
   d. library functions and programmer-defined functions with parameter-passing by value and by reference
   e. abstraction, modularity, separation of concerns
   f. use of the object-oriented programming model
2. **Debug** programming syntax and run-time errors.
3. **Produce** recursive algorithms, and **choose** appropriately between iterative and recursive algorithms.

4. **Describe** and **apply** basic software engineering design principles and software quality factors.

**Evaluation of Student Learning:** (Percentages are approximate)
- 40% Programming and other homework assignments
- 10% Labs
- 30% Midterms / Quizzes
- 20% Final

**Students with Disabilities:**
Accommodations are collaborative efforts between students, faculty and Disability Access Services (DAS). Students with accommodations approved through DAS are responsible for contacting the faculty member in charge of the course prior to or during the first week of the term to discuss accommodations. Students who believe they are eligible for accommodations but who have not yet obtained approval through DAS should contact DAS immediately at 737-4098.

**Link to Statement of Expectations for Student Conduct**, i.e., cheating policies
[http://oregonstate.edu/admin/stucon/achon.htm](http://oregonstate.edu/admin/stucon/achon.htm)

Created: 07/01/2012  
Revised: Spring 2013