Comp 11 - Intro to Computer Science
Course Syllabus, Fall 2010

Description and Objective:
This course is intended as an introduction to computer science. The formal objective of the course is to give exposure to the research areas of computer science and the core problems in the field; while preparing students for the programming needs of more advanced courses. We hope to achieve this goal by presenting higher level concepts in lecture and hands-on computer practices in the lab. This exposure comes from learning the basics principles of programming in C++.

People:

Instructor: XXX
Mail: XXX@tufts.edu Website: http://www.XXX.tufts.edu/
Office Location: Halligan Hall Extension, Room
Office Hours: Tuesdays 10:00-11:00 in Halligan 005
                      Wednesdays 2:00-4:00 in Halligan 118
                      or by appointment

Teaching Assistant: XXX
Mail: TBA Website: TBA
Office Location: Halligan Hall Room 107
Office Hours: TBA in Halligan 118
                      or by appointment

Lab Assistants: TBA

Course email: For general programming questions, project help, and C++ questions please use the course email XXX@tufts.edu This address sends to everyone and we respond faster!

Course Attendance: Attending class is mandatory. All students are responsible for the material covered in class. The homework and exams are directly related to the material discussed in class. The lectures in each section of the course are in synch. If you cannot attend your regular section for some reason, try to attend another section that same day. If you miss a lecture please see the professor to discuss what material was covered.

Course Locations: Sections 1 and 2 are located in Nelson Auditorium (Room 112 in Anderson Hall) Section 3 is located in room 111B in Halligan Hall. All labs are held in room 116 in Halligan Hall.
**Course Web Page:**
The course web page is [http://XXX.tufts.edu](http://XXX.tufts.edu) Please visit the website frequently for course materials, homework assignments, and announcements.

**Labs:** Attending your scheduled lab is mandatory. You will sign up the first week of class for a lab section. Students rank their top choices. We will do our best to accommodate your time preferences. Once you have a lab assignment you should attend that section. As many lab sections fill, we can not always accommodate drop-in visitors or schedule changes as the number of computers in the lab is limited. **There will be quizzes in labs.** From time to time, to facilitate learning the programming tools necessary for computer science, there will be small quizzes to test your ability. These count toward the participation portion of your grade detailed below.

**Lab Times:**
- Tuesday 6:00-7:15
- Tuesday 7:30-8:45
- Wednesday 10:30-11:45
- Wednesday 1:30-2:35
- Wednesday 3:00-4:15
- Wednesday 4:30-5:45
- Wednesday 6:00-7:15
- Wednesday 7:30-8:45
- Thursday 10:30-11:45

**Grade Calculation:**
- 45% **Homework** - written and coding projects
- 10% **Participation**, class participation, anti-quizzes.
- 20% **Midterm**
- 25% **Final**

Curving: We reserve the right to make changes to the above distribution. Rest assured, such changes would be minor and help represent a fair distributions of grades. All students would be notified of such a change.

**Text:** The required text book for this course is Problem Solving with C++. Walter Savitch, (Pearson) 2008. 7th edition. **Note: The 6th edition is fine!** There are no assigned readings in the course, but the textbook is a critical resource in helping study the syntax of C++. Students who are having difficulty with the concepts in lecture will find the textbook a great resource for extra examples of code. A copy of the textbook is on reserve in the library.

**Exams:**
There will be two exams during the course, a midterm that will cover material from the first half and a cumulative final exam which will be weighted toward material covered after the midterm. **The midterm will be on October 21.** The final exam is during your regularly scheduled block exam time. For section 1 (F+, 12:00-1:15) it is December 20,
3:30-5:30, for section 2 (L+, 4:30-5:45) it is December 22, 12:00-2:00, for section 3 (J+, 3:00-4:15) it is December 20, 7:00-9:00pm. Students may attend any one of these three exam times. There are no make-up exams.

**Homework:**
Homework will be assigned regularly in the course, it will come primarily as programming projects. Some projects are designed to take a few hours to complete others will take much more time. There will be two longer programming assignments in the course. There will be occasional written exercises. **Homework assignments will be weighted differently depending on the difficulty of the assignment.**

This homework will extend the programming work done in the lab. These assignments will be done on the computer and checked via the computer. It is important to repeatedly test your code before submission, all programming projects will be tested on the Linux cluster within the cs department. These assignments will be submitted through the computer science submission program called **provide.**

**Late Homework:**
Because of the size of the class and the amount of homework 10% of the total number of points for the assignment will be deducted daily. No homework will be accepted after 5 days.

**Academic Misconduct:**
Students should read the Tufts brochure on academic conduct located on publication website of the student affairs office: [http://uss.tufts.edu/studentaffairs/publicationsandwebsites/](http://uss.tufts.edu/studentaffairs/publicationsandwebsites/)

A few highlights are presented to emphasize importance.

- Absolute adherence to the code of conduct is demanded of the instructor, teaching fellow, and students. This means that no matter the circumstance any misconduct will be reported to Tufts University.

- While students are encouraged to discuss course materials, no collaboration is allowed on homework. Specifically you may discuss assignments and projects verbally, but must write up or work on the computer alone. In addition any discussion should be documented. An example on the project would be "Thanks to Doria for showing me how to initialize the linked list." Another important example is citing a source, this could be "This information was adapted from [www.boston.com](http://www.boston.com)"

- While computers enable easy copying and collaboration both with other students and materials from the Internet, it is possible to use these same computers to detect plagiarism and collaboration. **I reserve the right to write a program to detect plagiarism and inappropriate collaboration.**
Feedback:
Your thoughts and concerns on this course are important. You are encouraged to give feedback to the instructor and teaching fellow throughout the term. As always students will be asked to fill out a course evaluation at the end of the term.
Tentative Schedule:

September 7: Introduction, What is computer Science? What is programming? Variables C++

September 9: Math expressions - 2.3 Intro to functions 5.1 Input/Output - 2.2

September 14: Finish Math expressions - 2.3, Boolean expressions - 2.4, 3.1, If/Else - 3.2, Switch - 3.2, Constants - 2.5

September 16: Finish If/Else - 3.2 Nested If/Else - 3.2 Loops 3.3 Recursion part 0

September 21: Finish loops - 3.4 Functions with input - 4.3, 4.4 Casting -4.2, Scope, Globals

September 23: Overloading functions - 4.6, Pass by reference - 5.2,

September 28: Files 6.1-6.2 streams contd. 6.3

September 30: Arrays Part 1 - indexing, size, memory 7.1, 7.3

October 5: Arrays and Functions, 2 dimensional arrays 7.2, 7.4

October 7: Parallel Arrays

October 12: structs 10.1, composite types

October 14: structs contd. Character and string manipulation c strings 6.3, 8.1, 8.2

October 19: Midterm Review

October 21: Midterm

October 26: Pointers part 1 9.1 Pointer Play

October 28: Pointers part 2 9.1

November 2: Dynamic Memory, Dynamic Arrays, new, delete 9.2

November 4: Classes Part 1 10.2

November 9: Classes Part 2 10.2, member functions, Public vs Private.

November 16: Constructors/Destructors 10.2, 10.4

November 18: Abstract data Types 10.3

November 23: Recursion 14.1, 14.2

November 30: Recursive Data structures.

December 2: TBA

December 7: TBA

December 9: Review