CSCI 1320 (Principles of Programming I), Fall 2011
Syllabus

1 Course description

This course is the first course for computer science majors, following the guidelines established by the Association for Computing Machinery (described in Computer Science Curriculum 2008[1]). It also partially satisfies common-curriculum requirement *Understanding Natural Science and Technology.*

Course goals

- Understanding of fundamental problem-solving methodology.
- Ability to apply problem-solving techniques to algorithm design.
- Ability to develop and analyze algorithms.
- Ability to implement algorithms in a suitable programming language, using good programming habits.
- Understanding of basic data structures and sorting and searching algorithms.
- Basic knowledge of the Scala programming language and command-line development tools.

Course topics

- Introduction to computer organization and programming, including computer arithmetic.
- Basics of programming in an imperative block-structured language strongly-typed language, including data types, arrays, strings, structures, files, recursion, decisions, and loops.
- Beginning data structures.
- Sorting and searching.

2 Basic information

Class meeting times and location

- TR 3:35pm – 4:50pm, HAS 228

Prerequisites

- None.

Instructor contact information

- Dr. Berna Massingill
- Office: HAS 201L
- Office phone: (210) 999-8138
- E-mail: `bmassing@cs.trinity.edu`

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[1] `http://www.acm.org//education/curricula/ComputerScience2008.pdf`

Office hours

A current schedule of office hours can be found on my home Web page (`http://www.cs.trinity.edu/~bmassing`). If I'm not in my office during office hours, I should be somewhere in the building, perhaps in one of the labs helping another student, and there will often be a note on my door saying where to find me.

In addition to scheduled office hours, you're welcome to drop by and see if I'm in my office and free to talk, or you can make an appointment by calling me or sending me e-mail.

E-mail is almost always a good way to reach me; I normally check it fairly often and reply promptly.

3   Course materials

Textbook

This semester there is no textbook to buy; we will be using a book being written by Dr. Lewis, available online (linked from the course Web site).

Web page

Most course-related information (this syllabus, homework and reading assignments, etc.) will be made available via the Web. The course Web page is a starting point for Web-accessible course material; you can find it linked from my home page (`http://www.cs.trinity.edu/~bmassing`) or directly at `http://www.cs.trinity.edu/~bmassing/Classes/CS1320_2011fall/HTML`.

Other references

There are many references on programming, algorithms, Scala, and UNIX, far too many to list. Here are two books that may be of interest. The course Web site will also have a list of interesting or useful online references.

- Jon Lasser. *Think UNIX*. QUE, 2000. An interesting and short introductory book on UNIX, though somewhat old.
- Martin Odersky, Lex Spoon, and Bill Venners. *Programming in Scala: A Comprehensive Step-by-Step Guide*. Artima Inc., second edition, 2011. A good book on Scala for more experienced programmers.

4   Course requirements

Grading

Grades in this course will be determined by the results of two major exams (a midterm and a final), several in-class quizzes, several homework assignments, and class attendance/participation, weighted as follows.

Component	Maximum points
Midterm exam	100
Final exam	200
Quizzes	50
Homework	about 300
Class participation	50

Numeric grades will be calculated as a simple percentage, by dividing total points earned on the above components by total points possible. These numeric grades will then be converted to letter grades based on a curve, but in no case will the resulting letter grades be worse than students would receive based on the following scheme.

Numeric grade	Letter grade
90 – 100	A-/A
80 – 89	B-/B/B+
70 – 79	C-/C/C+
60 – 69	D/D+
0 – 59	F

Exams

Exams are comprehensive but will emphasize the most recent material. They are scheduled as follows; please plan accordingly (i.e., avoid scheduling anything else for these times).

- Midterm: October 11, in class.
- Final exam: December 13, noon.

Quizzes

About every other week there will be a short in-class quiz. Dates will be announced via the course Web page. They will usually cover material from recent classes and reading; the questions will be similar in format to those you are likely to see on the major exams. There will be about six quizzes over the course of the semester, and the lowest grade will be dropped.

Homework assignments

Homework (in the form of programming assignments) is a crucial part of this course; much of what you learn will likely be learned in the course of completing the programming assignments. Detailed requirements will be provided as part of each assignment; due dates will be announced via the course Web page. You are strongly encouraged to use the department's network of Linux machines, but unless otherwise specified for individual assignments, you may use any other system that provides a suitable environment.

Attendance

Regular class attendance is strongly encouraged; class participation grades will be based largely on attendance.

E-mail

Course-related announcements will sometimes be made by sending e-mail to the Trinity e-mail addresses of all registered students. Students are strongly encouraged to read mail sent to their Trinity addresses frequently.

Late and missed work

Exams can be made up only in cases of documented conflict with a university-sponsored activity, documented medical emergency, or conflict with a religious holiday. Quizzes cannot be made up, but the lowest quiz score will be dropped, so you can miss one quiz without penalty.

Unless otherwise stated for a particular assignment, homework will be accepted up to one class period late, *but no more*, at a penalty of 10 percent off per working day. This penalty may be waived or additional time allowed *at the instructor's discretion* in cases of illness or conflict with a university-sponsored activity or religious holiday.

If you have unusual circumstances (as we all sometimes do), please discuss these with me as far in advance as possible.

Academic integrity at Trinity

All students are covered by the Trinity University Honor Code, which prohibits dishonesty in academic work.

The Code asserts that the academic community is based on honesty and trust. It defines specific violations as well as the procedure to determine if a violation has occurred. It also covers the process of hearings for alleged violations and the various sanctions applied for specific violations, and it provides for an appeal process.

The Code is implemented by the Academic Honor Council. Under the Code, a faculty member will (or a student may) report an alleged violation to the Academic Honor Council. It is the task of the Council to collect the pertinent evidence, adjudicate, and assign a sanction within certain guidelines if a violation has been verified.

Students who are under the Honor Code are required to pledge all written work that is submitted for a grade: "On my honor, I have neither given nor received any unauthorized assistance on this work" and their signature. The pledge may be abbreviated "pledged" with a signature. (For electronically submitted work, you should include the text somewhere in what you submit.)

Collaboration and academic integrity in this course

Unless otherwise specified, all work submitted for a grade (homework assignments, quizzes, and exams) must represent the student's own individual effort. Unless otherwise stated, all submitted work will be considered pledged work.

Discussion of homework assignments among students is encouraged, but not to the point where detailed answers are being written collectively. If you are working with another student in a lab, seeing another student's answers may be unavoidable, but please do *not* share answers electronically. If you are uncertain about whether a particular level of collaboration is acceptable, please ask for clarification. Graded papers and sample solutions from previous years (exams, quizzes, and homeworks) are off limits. Answers that are identical beyond coincidence (either to another student's work or to a sample solution from a previous year) will be considered to be in violation of the Honor Code, and *will result in appropriate action*. You are responsible for the security of your work, both electronic and hard copy.