CSC 211 – Introductory Programming and Design

Spring 2006

Lectures
Bliss Hall, Room 305
Mon., Wed., & Fri., 1:00-1:50

Labs
Tyler Hall, EnVision Lab (Rm 36)
Thursday, 3:30-5:15 PM

Professor
Jean-Yves Hervé
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Office hours:
Thursday, 12:30 PM - 2:00 PM
some other day TBA
or by appointment

Teaching Assistant:
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Office hours:
TBA

Lab assistant(s):
TBA

Equipment and References

Course text
J. Lewis & W. Loftus
Java Software Solutions (Java 5.0 version) : Foundations of Program Design, 4th edition

There are way too many Java programming books on the market. Resists the urge to purchase additional books, thinking that this will make your life easier. It is much preferable for you to learn how to use properly the on-line documentation that comes with your development tools. Java is still moving and growing, fast. The fundamentals of the language have been kept mostly untouched, but new modules and functionalities are added all the time (communications, image processing, sound, etc.). Today Java is just too big for anyone to expect to master it completely. Instead, one should concentrate on mastering the fundamentals of the language and knowing where and how to find information on given topics.

Programming environment

We will be using the Eclipse integrated development environment (IDE) and the programming language Java. Eclipse was developed by IBM and is available as a free download for Windows 2000 & XP, Linux, and Mac OS X (http://www.eclipse.org/). The latest version of Eclipse is Version 3.1, which was released in August 2005.
The Course at a Glance

Prerequisites

MTH 111 (precalculus) or equivalent; prior experience with computers and programming.

Note that the word “Introductory” in the title of this course should not be understood as indicating that we will be starting “from scratch.” You are definitely expected to have done some programming in the not-so-distant past.

Computer Science was created as a subfield of applied mathematics and still requires a solid mathematical background. If your mathematical skills are weak you will run into problems sooner or later. This semester I will try to use some of the maths prerequisites in your laboratory assignments.

Brief Outline

Introduction to computers and programming languages. Data representation. Control flow. Introduction to classes and objects: inheritance, overriding. Basic classes of Java 2. Elements of software design.

Objectives

CSC 211 is intended primarily for Computer Science and Computer Engineering majors. During this semester, you will learn about programming, data representation, algorithm development, and object-oriented design. At the end of this course, you will be able to

- Analyze a simple programming problem and break it down into several subproblems or modules of programmable size;
- Develop an object-oriented design and algorithms for each module;
- Implement these modules in Java, test them, and debug them.

A comment

Programming is learned by (1) practice, (2) judicious use of reference manuals, (3) discussions with other programmers, (4) more practice.
Grading

The Mix

The following coefficients will be used to compute the final grade:

- Homework assignments 10%
- Laboratory assignments 40%
- Final project 15%
- Midterms and quizzes 35%

Examinations

Two examinations (held during normal class hours) tentatively scheduled as follows:

- Midterm Exam 1: Wednesday, March 01,
- Midterm Exam 2: Wednesday, April 05.

Short quizzes will be held occasionally as well. Don’t expect me to announce the quizzes in advance because I typically don’t know myself that I will be giving a quiz until about 20 minutes before the class starts.

Assignments

I will hand out regularly reading assignments (from the textbook) and some homework assignments. There will be laboratory assignments nearly every week.

Homework assignments

The homework assignments should not take you much time. They will be in direct application of the course, to verify that you understand and master the basic concepts we see in class. These assignments should not take you much time to complete (about 1/2 h each).

Laboratory assignments

You will not have to return anything immediately at the end of a lab: The lab time is there for you to experiment, ask questions (and hopefully get good answers), and generally trying to figure things out. At the beginning of the next lab, you will be asked to demonstrate the proper execution of your software and to hand in a printout of your code as well as a report on your work.
Final project

The final project will give you the opportunity to develop a piece of code more ambitious in size, and put into practice what you have learned over the semester. During the period reserved for the final project, there will not be new laboratory assignments. We will continue to have laboratory sessions, but these will be used to help you complete your project, with feedback from the lab assistant(s) and me.

Rules of Conduct

Late Submissions

All assignments should be turned in on the day and time they are due. If an assignment is not turned in on time, a 10% penalty will be applied for each late day (a fraction of a day will count as a whole day). Assignments more than one week late will not be graded.

If the assignment asks for multiple deliverables (code, project, report, Javadoc documentation) the date at which the last item was handed in will be used to determine the late penalty.

If you submit an assignment late, don’t just upload it to the server. You must also send an email to the TA (with Cc. to me) to inform her that the assignment is now complete and ready to be graded. You cannot just expect people to watch after you.

Cheating

Unless explicitly stated otherwise, all work should be done individually. Any evidence of cheating may result in expulsion from the class with a failing grade and will be brought to the attention of the Dean for disciplinary action.

You are strongly encouraged to discuss the assignments with other students, and try to figure them out together, but when comes the time of writing a report or developing code, you are expected to do it by yourself (or with other students from your group when the assignment explicitly mentions groups of 2 to 3 students).

Copying software from a book or from a web site without identifying the original author(s) of the work is plagiarism, which is a form of cheating.

Laboratory use

Any abuse of computer or software equipment will be brought to the attention of the appropriate authority for disciplinary action. Software piracy (the use, appropriation, or storage of illegal copies of software) is a form of abuse of the equipment and will be treated accordingly.

Attendance

Class attendance is not mandatory, although I strongly suggest that you make efforts to attend all classes. We will spend a significant part of the time in classes discussing about examples of programs, possible errors, bugs, etc. Don’t spend too much time taking notes during classes; rather
make efforts to understand on-line what is going on. It will only get easier as we advance in the semester.
Lab attendance is mandatory and will factor in the evaluation.

**Tentative Class Schedule**

We are going to follow the order of chapters in the textbook pretty faithfully with the notable exception of topics related to GUI (Graphical User Interface) and graphics, which will not be taught in class, but rather learned "on the job," while doing lab and homework assignments.