Introduction to Java Programming

ITP 109 (2 Units)

USC Viterbi School of Engineering

Spring 2013

Objective

This course is intended to teach the basics of programming, the foundations of object oriented programming, and the process of building a project in a modular fashion using the Java programming language.

Concepts

Programming fundamentals including variables, control statements, loops, and arrays, object-oriented programming, Java applications, and Java applets.

Prerequisites

None. This class is intended for non-programmers.

Instructor	Nathan Greenfield
Contacting the Instructor	nathan.greefield@usc.edu
Office Hours	Listed on Blackboard under Contacts
Lab Assistants	Listed on Blackboard under Contacts
Lecture/Lab	2 hours, twice a week, for a total of 4 hours 12:00 – 1:50 pm, Tuesday and Thursday

Required Textbooks

Java: Introduction to Problem Solving and Programming. Walter Savitch, Frank M. Carrano. Pearson Prentice Hall. Loose Leaf ISBN-13: 9780132766067. This comes with access to myProgrammingLab.com website and is available at the USC bookstore. As an alternative, you may buy the ebook from the http://myProgrammingLab.com website.

Optional Textbooks

None

Website

All course material will be on Blackboard (http://blackboard.usc.edu).

Grading

The following percentage breakdown will be used in determining the grade for the course.

Assignments	40%
Midterm	30%
Final Project	30%
Total	100%

Grading Scale

The following shows the grading scale to be used to determine the letter grade.

93% and above	A
90% - 92%	A-
87% - 89%	B+
83% - 86%	B
80% - 82%	B-
77% - 79%	C+
73% - 76%	C
70% - 72%	C-
67% - 69%	D+
64% - 66%	D
63% and below	F

Policies

No make-up exams (except for documented medical or family emergencies) will be offered nor will there be any changes made to the Final Exam schedule.

The labs will be posted on Blackboard under the “Assignments” section. Each lab will include instructions, a due date, and a link for electronic submission. Labs must be submitted using this link.

It is your responsibility to submit your assignments on or before the due date. Assignments turned in one day late will have 20% of the total points deducted from the graded score. Assignments turned in two days late will have 50% of the total points deducted from the graded score. After two days, submissions will not be accepted and you will receive a 0.

All assignments will be digitally submitted through Blackboard except where specifically specified. Do not email them to the lecturer or lab assistant

Before logging off a computer, students must ensure that they have emailed or saved projects created during the class or lab session. Any work saved to the computer will be erased after restarting the computer. ITP is not responsible for any work lost.

ITP will have open lab hours starting the second week of the semester. The open labs will not have a lab assistant for this specific class. These lab times are there in case you need extra time to complete a lab.

The final project is an individual programming assignment. It will be due during the final exam time listed in the exam schedule on the USC Schedule of Classes.

Although working together is encouraged, all work claimed as yours must in fact be your own effort. Students who plagiarize the work of other students will receive zero points and possibly be referred to Student Judicial Affairs and Community Standards (SJACS).

A roster will be passed around the room during each time the class meets. Please initial by your name for the appropriate week.

Incomplete and Missing Grades

Excerpts for this section have been taken from the University Grading Handbook, located at http://www.usc.edu/dept/ARR/grades/gradinghandbook/index.html. Please see the link for more details on this and any other grading concerns.

A grade of Missing Grade (MG) "should only be assigned in unique or unusual situations… for those cases in which a student does not complete work for the course before the semester ends. All missing grades must be resolved by the instructor through the Correction of Grade Process. One calendar year is allowed to resolve a MG. If an MG is not resolved [within] one year the grade is changed to [Unofficial Withdrawal] UW and will be calculated into the grade point average a zero grade points.

A grade of Incomplete (IN) "is assigned when work is no completed because of documented illness or other 'emergency' **occurring after the twelfth week** of the semester (or 12th week equivalency for any course scheduled for less than 15 weeks)."

Academic Integrity

USC seeks to maintain an optimal learning environment. General principles of academic honesty include the concept of respect for the intellectual property of others, the expectation that individual work will be submitted unless otherwise allowed by an instructor, and the obligations both to protect one's own academic work from misuse by others as well as to avoid using another's work as one's own. All students are expected to understand and abide by these principles. *Scampus,* the Student Guidebook, contains the Student Conduct Code in Section 11.00, while the recommended sanctions are located in Appendix A: http://www.usc.edu/dept/publications/SCAMPUS/gov/. Students will be referred to the Office of Student Judicial Affairs and Community Standards for further review, should there be any suspicion of academic dishonesty. The Review process can be found at: http://www.usc.edu/student-affairs/SJACS/.

Students with Disabilities

Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to your course instructor (or TA) as early in the semester as possible. DSP is located in STU 301 and is open from 8:30am to 5:00pm, Monday through Friday. Website and contact information for DSP http://sait.usc.edu/academicsupport/centerprograms/dsp/home_index.html (213) 740-0776 (Phone), (213) 740-6948 (TDD only), (213) 740-8216 (FAX) ability@usc.edu

Emergency Preparedness/Course Continuity in a Crisis

In case of emergency, when travel to campus is difficult, if not impossible, USC executive leadership will announce a digital way for instructors to teach students in their residence halls or homes using a combination of the Blackboard LMS (Learning Management System), teleconferencing, and other technologies. Instructors should be prepared to assign students a "Plan B" project that can be completed 'at a distance.' For additional information about maintaining your classes in an emergency, please access: http://cst.usc.edu/services/emergencyprep.html

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Course Outline

Week 1 – Introduction to Programming and Java

- Course overview
- What is programming?

Reading

Chapter 1

Assignment/Lab

Lab 1 – Instructions

Week 2 –Basic Computation

- Variables and Expressions
- The String class
- Keyboard and screen I/O

Reading

Chapter 2

Assignment/Lab

Lab 2 – Mad Libs

Week 3 – Java Fundamentals

- Bits and Bytes
- Primitive Types
- Math equations

Reading

Chapter 2

Assignment/Lab

Lab 3 – Vending Machine

Week 4 – Flow of Control

- If-else
- Boolean expressions
- And, Or
- switch

Reading

Chapter 3

Assignment/Lab

Lab 4 – Temperature Conversion

Week 5 – Loops

- while
- do-while
- for

Reading

Chapter 4

Assignment/Lab

Lab 5 – Largest Num & Factorial

Week 6 – Defining Classes and Methods

- Class and methods definitions
- Instance variables

Reading

Chapter 5

Assignment/Lab

Lab 6 Part 1 – Person & PersonFinder

Week 7 – Constructors and Methods

- Defining constructors
- Static variables and methods

Reading

Chapter 6

Assignment/Lab

Lab 6 Part 2 – Person & PersonFinder

Week 8 – Arrays

- Array Basics

Reading

Chapter 7

Assignment/Lab

Lab 7 Part 1 – Times Table

Week 9 – Midterm

Week 10 – Sorting and Searching Arrays

- Sorting using arrays

Reading

Chapter 7

Assignment/Lab

Lab 7 Part 2 – Deck of Cards

Week 11 – Inheritance

- Superclass or base class
- Subclass or derived class

- Overriding methods

Reading

Chapter 8

Assignment/Lab

Lab 8 – Vampire/Human

Week 12 – Polymorphism

- Interfaces and abstract classes
- Overloading methods

Reading

Chapter 8

Assignment/Lab

Lab 8 – Vampire/Human

Week 13 – Exception Handling

- Exceptions
- Throws and Catches

Reading

Chapter 9

Assignment/Lab

Final Project

Week 14 – Applets

- Init, start, and stop methods
- Event handling

Reading

Lecture notes posted on Blackboard

Assignment/Lab

Final Project

Week 15 – GUIs

- Graphical User Interface components
- Swing

Reading

Lecture notes posted on Blackboard

Assignment/Lab

Final Project

Final Project

Date, Time, and Place

According to the final exam schedule