Introduction to Java Programming

ITP 109 (2 Units)

USC Viterbi School of Engineering

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, arrays, and object-oriented programming in Java applications.

Prerequisites

None. This class is intended for non-programmers.

Instructor	Rob Parke
Contacting the Instructor	parke@usc.edu
Office Hours	Listed on Blackboard under Contacts
Lab Assistants	Listed on Blackboard under Contacts
Lecture / Lab	One hour and 20 minutes, twice a week, for a total of 2 hours and 40 minutes. 12:30 pm – 1:50 pm, Tuesday and Thursday

Required Textbooks

Java: Introduction to Problem Solving and Programming. Walter Savitch, Frank M. Carrano. Pearson Prentice Hall. ISBN: 0132162709.

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.

Class Participation	5%
Lab Assignments	50%
Midterm Exam	20%
Final Project	25%
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.

Assignments turned in up to three days late will have 50% of the total points deducted from the graded score. After three days, submissions will not be accepted and you will receive a 0. It is the responsibility of the student to contact the grader when posting late projects.

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

You are required to save your labs using a USB flash drive or a website such as http://www.dropbox.com. You must keep a copy of all labs. You will not be able to save your work on the ITP lab computers. If available, you will be given one USB flash drive from ITP.

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.

A roster will be passed around the room during each lecture session. Please sign 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/.

A Note about Collaboration and Cheating

Assignments and projects in computer programming course are different from those in some other types of courses. Students may **NOT** collaborate, work together, share code, or in any way exchange solutions for assignments and projects. All assignments are analyzed by software that looks for similarity. Any sharing of ideas or code will be considered a violation of academic integrity (cheating) and an SJACS report will be filed.

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

Note: Subject to change

Week 1 – Introduction

- Course overview
- About programming

Reading

Chapter 1

Assignment/Lab

Lab 0 – Tool setup
Lab 1

Week 2 – Data types

- Variables
- Input & output

Reading

Chapter 2

Assignment/Lab

Lab 2

Week 3 – Operators

- Math expressions
- Other operators

Reading

Chapter 2

Assignment/Lab

Lab 3

Week 4 – Decisions

- Boolean expressions
- Branching code

Reading

Chapter 3

Assignment/Lab

Lab 4

Week 5 – Loops

- Various Java loops
- Debugging

Reading

Chapter 4

Assignment/Lab

Lab 5

Week 6 – Methods

- Method definitions
- Variable scope

Reading

Chapter 5

Assignment/Lab

Midterm preparation

Week 7 – Midterm

Week 8 – Arrays

- Programming with arrays
- Arrays in methods

Reading

Chapter 7

Assignment/Lab

Lab 6

Week 9 – Classes

- Class definitions
- Instance variables

Reading

Chapter 5

Assignment/Lab

Lab 7

Week 10 – Class methods

- Object oriented programming
- Packages

Reading

Chapter 6

Assignment/Lab

Lab 8

Week 11 – Inheritance

- Superclass or base class
- Subclass or derived class
- Overloading methods

Reading

Chapter 8

Assignment/Lab

Lab 9

Week 12 – Polymorphism

- Interfaces and abstract cases
- Overloading methods

Reading

Chapter 8

Assignment/Lab

TBD

Week 13 – Graphical user interfaces

- Swing
- Java events

Reading

TBD

Assignment/Lab

TBD

Week 14 – Exceptions

- Swing
- Java exceptions

Reading

TBD

Assignment/Lab

Final project

Week 15 –Grab Bag

- Utilities (ArrayList)
- Documentation
- Debugging

Reading

Chapter 11

Assignment/Lab

Final project

Final Exam/Project

Assignment

Final project due at the end of the scheduled final exam time