CS 201: Accelerated Introduction to Computer Science

Course Description

Problem-solving and design using an object-oriented programming language. Introduces a variety of problem-solving techniques, algorithms, and data structures in object-oriented programming. (3-2-4)

Prerequisites: CS 105 or Experience using any programming language.
Credit: 4 credit hours

Textbook

Deitel & Deitel – Java: How to Program
6th Edition
ISBN: 0131483986

Instructor

- Tom Smith
- Office hours Wednesday 12:00PM - 3:00 PM Room 000 SB
  smitht@iit.edu
- Course TA:
  cs201@cs.iit.edu

Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Topic</th>
<th>Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1/18</td>
<td>Java Programming Basics</td>
<td>Chapter 2</td>
</tr>
<tr>
<td>2</td>
<td>1/25</td>
<td>Overview/control Structures</td>
<td>Chapters 2, 4</td>
</tr>
<tr>
<td>3</td>
<td>2/1</td>
<td>Control structures</td>
<td>Chapter 5</td>
</tr>
<tr>
<td>4</td>
<td>2/8</td>
<td>Arrays</td>
<td>Chapter 7</td>
</tr>
<tr>
<td>5</td>
<td>2/15</td>
<td>Midterm I</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>2/22</td>
<td>Methods</td>
<td>Chapter 6</td>
</tr>
<tr>
<td>7</td>
<td>3/1</td>
<td>Methods</td>
<td>Chapter 6</td>
</tr>
<tr>
<td>8</td>
<td>3/8</td>
<td>Java Applets</td>
<td>Chapter 20</td>
</tr>
</tbody>
</table>
Course Goals

• The primary object is to provide necessary skills for “programming” and “problem solving” using JAVA to students with previous experience in programming.
• Describe the basic and object-oriented programming concepts, the Java platform, and types of Java programs, as well as how to install and configure the Java SDK.
• Use constants, variables, and various data types.
• Create and use methods, classes, and instantiate objects from classes.
• Define blocks and scope of a variable, overload methods and constructors, and work with constants.
• Introduce event driven Graphical User Interface (GUI) programming

Concepts

Class Introduction/Syllabus 1.0 hours
Introduction to Java Programming 4.0 hours
Control Structures 4.0 hours
Arrays 3.0 hours
Methods 5.0 hours
Applets/Applications 4.0 hours
Strings & Characters 2.0 hours
Object-Oriented Programming 11.0 hours
Files & Streams 2.0 hours
Project Overview/Description 2.0 hours
In Lab Work 30.0 hours
Midterm Exams 2.0 hours
Midterm Exam Answer Reviews 2.0 hours
Final Exam Review 3.0 hours

-----------------------------------------------
Total Semester 75.0 hours
-----------------------------------------------
Grading

A = 90-100%
B = 80 - 89%
C = 70 - 79%
D = 60 - 69%
E = 50 - 59%

Composition:

Labs/Homework 30%
Project 20%
Exams 50%

Labs

The labs for this class are designed to help you practice the course material for quizzes, exams, and the programming project. The student must:

• Attend each lab session
• Bring a disk or other storage device
• Have all Pre-lab (or last week's Post-lab) work completed before the start of lab
• Complete the In-lab work during the allotted lab times
• Ensure that the lab TA has checked off all lab work during the lab period.
• Understand lab grading:
  • 10 – 9 points - Solution is complete and functional, possibly with some minor mistakes that the TA can walk the student through in a minute or two.
  • 8 – 6 points - Solution compiles and is functional, but does not meet all major lab requirements and cannot be fixed in a few minutes' time.
  • 5 – 4 points - Used a valid approach but was unable to compile the program or was unable to test the program due to significant flaws in the implementation.
  • 3- 1 points - Tried to solve the problem but made little headway.
  • 0 points - Didn't attend lab or made no serious attempt to solve the assigned problem.

Project

A programming project will be completed during the semester. In this project, ideas and techniques covered during the course will be used to solve a problem. The project will cover concepts discussed during the class and will be a
culmination of many of the skills tested in the lab sessions. Some of the lab sessions will have time dedicated to working on the project. The project will be discussed during week 5 and will be due at the end of the semester.

Exams

There will be three exams this semester, two midterms and a final exam, all closed book, closed notes.

Exam 1 – Week 5
Exam 2 – Week 10
Final Exam – Week 15 (consult the final exam schedule at enrollment.iit.edu)
The final exam will be comprehensive and be over topics discussed in the book, in lecture, lab and will contain questions about the final project.

Academic Integrity

Any indication of copying or cheating during quizzes/exams, on labs, or on the programming project will result in an immediate zero for the assignment for all parties involved. If a second offense is committed, the students' advisor and the Undergraduate Dean will be notified.

Students are responsible for deleting programs from lab computers and taking all safeguards to prevent them from being copied.

Resources:

TA : cs201@cs.iit.edu
Academic Resource Center (ARC): http://arc.iit.edu
And never be scared to contact me! smitht@iit.edu

Books 24 x 7 is a database of electronic books available via the Galvin Library book resources.