95-807 Object-Oriented Programming for Managers

12 units

Prerequisites: 95-815 Programming Basics is required for students with little or no prior programming coursework or experience. (http://www.andrew.cmu.edu/course/95-815/)

The course provides an overview of computer programming concepts and object-oriented thinking using the Java programming language. Students will be introduced to general programming concepts such as loops and recursions as well as the specific object-oriented themes of methods, classes, and inheritance. The goal is for the student to cultivate an appreciation and understanding of the impact of these concepts and themes on the management of large-scale software development projects.

Instructor
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Teaching Assistants
See Blackboard, Staff Information

Required Textbooks

Software
JDK - You will download and install the JDK as part of your first assignment.

Program Editor – You are free to choose a program editor of your choice. There are many editors available such as Eclipse, NetBeans, jGRASP, DrJava, BlueJ, and TextPad. The advantage of using a java-aware editor is that the editor will catch syntax errors. Eclipse is a popular IDE which is demonstrated in one of the lectures. You can also use this editor for this class. It is a common editor used in the industry, however it is much more complex and feature rich than TextPad. Most of these features are not necessary for this class.

Submitting Assignments
Assignments are submitted in a zip file to Blackboard through the Assignments page. Please note, when submitting your assignment, you must click the “Submit” button. Uploading your files and clicking the “Save As Draft” button will not submit your assignment for grading. Assignments are due by 11pm EST on the due date.

Your CMU Andrew id and the assignment number (ie Assignment1, Assignment2, etc) must be on your submittals (at the top of the first page if it’s a Word document, in the program comments if it’s a program, etc).

Part of your assignment grade depends on how the assignment is submitted. Submittal requirements include the format and, in some cases, that the software must run “out of the box”. In the past some students questioned why point deductions are taken for packaging. First, in this programming course for which you are delivering software, I want you to understand the effort of packaging software. Just as for software delivered to a customer, it must run on the first attempt. Second, attention to packaging often leads to higher quality software. Third, consistency is needed for TA grading efficiency.
Academic Integrity
Be sure to review and understand the Heinz College and Carnegie Mellon policies on Academic Integrity. You can find the policies in your student handbook and online.

The academic integrity standards outlined in your student handbook will be strictly enforced in this class. Penalties for cheating and plagiarism are determined by the instructor and can range from receiving a zero on the assignment to a failing grade in the course. The instructor can recommend to the Dean that the student receive a more serious penalty based on the severity of the offense.

Collaboration is not permitted in this class.
Keep the following guidelines in mind when discussing the programming assignments with others.

Acceptable
- You may discuss the requirements of the assignment, but not specifics, such as code
- You may discuss general approaches to solving the assignment including textbook and lecture references, but not specifics, such as code
- You may refer to code samples from the textbook, lectures and class handouts

Not Acceptable and Considered Cheating
- You may not discuss specific code
- You may not look at or copy other’s assignment code, in whole or in part
- You may not have someone else write code for you
- You may not copy code you find on the web
- You may not submit another’s work as your own
- You may not have in your procession other students assignments or exams from the current or past semesters
- You may not share your assignment code with others
- You may not use an alternate, stand-in, or proxy during an exam
- You may not receive help from someone else during an exam

If students are found to be sharing code, both the student who shared their code and the student who used the code will be found in violation of the academic integrity policy. All students involved will be penalized equally.
Blackboard Discussion Forum Assignments

Some weeks we will have a discussion topic about common technologies to share up-to-date information and to tell "real work" stories and examples. Forum postings contribute to the forum participation part of your grade. You get credit for a reply post, or you can begin a new post within the same topic. Your forum grade is based upon the value you add to the discussion. Do not expect a good grade for postings such as, "Good point." or "I agree."

The purpose of the forum discussion assignments is to generate some conversation about topics relevant to OOP and managing development projects. This class has a wide variety of experience and we can all learn from each other by sharing our thoughts and stories. The topics are listed in the syllabus at the start of the semester; however, the actual forum will not be available to submit your postings until the week it appears on the class schedule.

Some of the discussions will require a little research and leg work on your part to participate. However, when posting, I expect you to post your comments, thoughts, summaries and experiences. I want you to think critically about what you are reading during your research and other postings and challenge them if you disagree and add your thoughts if you agree. Do not copy and paste a great article you found or combine several articles and submit it as your thoughts. That is plagiarism and will result in a 0 as your score for that forum. Sometimes you will find a great quote while researching and want to share it. That is fine, but you MUST cite it. And I will expect comments and discussion about the quote, not just "Here’s a great quote I found when Googling OOP."

Assignment Grading

- Late assignments will lose 10% of the grade per 24 hour period. No exceptions will be made. Assignments will not be accepted if they are more than a week late.

- Assignments, due dates and the lecture and reading schedule are available so you can plan ahead. If you know a particular week will be extremely busy for you because of other classes or employment, you can work ahead and submit assignments before the actual due date. No adjustments or exceptions will be made for late assignments.

Questions?

We will also use the Blackboard Discussion forums for class and assignment related questions and comments. You are encouraged to post questions, comments and respond to other posts and questions on the Blackboard Discussion Forums.

To get help on an assignment that will require you to share specific code or details, you can send email to the instructor or teaching assistants.

Final Grade

Final grades will be weighted as follows:

- Assignments: 30%
- Discussion Forums: 20%
- Midterm Exam: 20%
- Final Exam: 30%

Your final grade will be calculated based upon the Grading Standards outlined in the Heinz College Student Handbook. The Heinz College faculty has endorsed guidelines for grades. The mean grade in a core class should be 3.33 - 3.42 and in advanced core, concentration and elective courses it should be 3.5.
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Tentative Course Outline and Schedule

Week 1: May 22, 2017
Topics: Basics of OOP, first Java program, programming environment, program control
Readings: Ch 1 Intro to Computers and Java
         Ch 2 Basic Computation
         Ch 3 Flow of Control: Branching
Lecture: Lecture 1 (17:00-end), 2 and 3
Discussion Forum: Your Background
Forum Due: May 28, 2017, 11pm EST

Week 2: May 29, 2017
Topics: Program Control, Classes and Methods
Readings: Ch 4 Flow of Control Loops
         Ch 5 Defining Classes and Methods
Lecture: Lecture 4, 5 and 6
Assignment: Assignment 1
Assignment Due: June 4, 2017, 11pm EST

Week 3: June 5, 2017
Topics: Packages, access specifiers, composition, inheritance, constructors, finals, class loading, accessor/mutator (getter/setter) methods
Readings: Ch 6 More About Objects and Methods
Lecture: Lecture 7 and 8

Week 4: June 12, 2017
Topics: Polymorphism, abstract classes
Readings: ch 8 Inheritance, Polymorphism, and Interfaces
Lecture: Lecture 9 and 10
Assignment: Assignment 2
Assignment Due: June 25, 2017, 11pm EST

Week 5: June 19, 2017
Topics: Interfaces and inner classes
Lecture: Lecture 11 and 12
Discussion Forum: Benefits of Object Oriented Programming Methodologies
Forum Due: July 9, 2017, 11pm EST
Week 6: June 26, 2017
Topics: Exception Handling, Streams, File I/O, and Networking
Readings: Ch 9 Exception Handling
          Ch 10 Streams, File I/O, and Networking
Lecture: Lecture 17
Assignment: Midterm Exam
Midterm Due: July 2, 2017, 11pm EST

Week 7: July 3, 2017
Topics: Arrays, Collections and Iterators
Readings: Ch 7 Arrays
          Ch 12 Dynamic Data Structures and Generics
Lecture: Lecture 13 and 14
Assignment: Assignment 3
Assignment Due: July 16, 2017, 11pm EST

Week 8: July 10, 2017
Topics: Applets, Applications, Swing
Readings: Ch 13 Window Interfaces using Swing (online chapter)
Lecture: Lecture 15 and 16

Week 9: July 17, 2017
Topics: Applets, Applications, Swing
Readings: Ch 15 More Swing (online chapter)
Lecture: Lecture 18
Assignment: Assignment 4
Assignment Due: July 30, 2017, 11pm EST

Week 10: July 24, 2017
Topics: Recursion, Threads
Readings: Ch 11 Recursion
Lecture: Lecture 19

Week 11: July 31, 2017
Topics: JDBC
Lecture: Lecture 20
Final Exam: August 4, 2017 – August 11, 2017
Final Exam Available: August 4, 2017 8am EST
Final Exam Due: August 11, 2017 11pm EST

Assignment Due Dates
Your Background Discussion Forum May 28, 2017, 11pm EST
Assignment 1 June 4, 2017, 11pm EST
Assignment 2 June 25, 2017, 11pm EST
Midterm Exam July 2, 2017, 11pm EST
OOP Discussion Forum July 9, 2017, 11pm EST
Assignment 3 July 16, 2017, 11pm EST
Assignment 4 July 30, 2017, 11pm EST
Final Exam August 11, 2017 11pm EST