CS 159: Advanced Programming
James Madison University, Spring 2015 Semester, 3 Credits

Home Page:
http://w3.cs.jmu.edu/mayfiecs/cs159

Class Times:
Section 3: M/W/F, 11:15 AM – 12:05 PM
HHS 2208 classroom and ISAT/CS 250 lab

Prerequisites:
B- or better in CS 139/149 or equivalent

Catalog description: Students use advanced problem-solving strategies to develop algorithms using classes and objects and techniques such as recursion, exceptions and file I/O. This course also focuses on designing small applications and effective testing strategies.

Your Instructor
Dr. Chris Mayfield
mayfiecs@jmu.edu
Office: ISAT/CS 208
Phone: 540-568-3314

Office Hours:
Tu/Th, 2:00 PM – 4:30 PM
(no appointment necessary)

Questions related to course content should be asked through Piazza. You may use email if you need to contact me directly. Please don’t contact me through the Canvas messaging system.

Goals and Objectives
By the end of this course, you should be able to:

• Use advanced programming techniques to solve computing problems. These include but are not limited to: polymorphism, inheritance, abstract classes, interfaces; exceptions, file I/O, recursion; data structures such as multi-dimensional arrays, ArrayList, and HashTable.

• Implement appropriate object oriented design techniques. Interpret UML diagrams and their relationship to the design process.

• Practice appropriate testing techniques to test an application thoroughly during development.

• Read and understand software specifications to implement code that conforms to requirements and to course coding standards.
Nature of Course Content

Required Textbook

Starting Out with Java:
From Control Structures through Objects
by Tony Gaddis, Haywood Community College
http://www.pearsonhighered.com/gaddis/

This textbook is used extensively in both CS 139 and CS 159. Please obtain either the 4th or 5th edition. Used copies are okay, although you may want to get the CD or purchase online access so that you have the appendices and example source code from the book.

Course Schedule

We will primarily study chapters 7–11 and 15 of the required textbook. A detailed schedule with applicable readings and assignment due dates will be maintained on the course home page as the semester progresses. You are strongly encouraged to read the textbook and other assigned readings, even if material is not covered in the lectures.

Methods of Evaluation

Participation

Many class sessions and labs will include a graded component. In general, it will not be possible to make up missed in-class activities. Laboratory assignments may take longer than a single class period, so be prepared for homework on lab days. Unless otherwise specified, lab assignments will be due at the start of the following day of class. For most labs you will be allowed to work in groups of no more than three students.

Assignments

There will be seven programming assignments over the course of the semester. These assignments must be completed individually. There will be opportunities to get help from the lab assistants and the instructor. I encourage you to start early enough to take advantage of all available resources. Programs will be graded on correctness, documentation, and overall code quality. All submissions must conform to CS 159 Policies Related to Programming Assignments and Labs.

Late Work Policy

Late submissions will be docked 25% per day for up to two days. Except under extraordinary circumstances, I will not provide extensions for illnesses, extracurricular obligations, etc. Instead, you will have two “late days” which may be applied upon request (with possible exceptions at the end of the semester or immediately before exams). The use of a late day allows you to extend the deadline for an assignment by 24 hours. You may apply both days to a single assignment or distribute them across multiple assignments.
Midterms/Final Exam

We will have three midterms in class and a comprehensive exam during finals week. If you must be absent during an exam for a legitimate reason (very rare), you must contact me at least two weeks beforehand to make special arrangements. Failure to make prior arrangements for a missed exam will result in a grade of 0 for the exam.

Note: Students who do not earn 60% of the points on the final exam will receive a letter grade no higher than D+ for the course. You must achieve a C- or better grade to continue on to CS 240.

Grading Details

Your final grade will be based on:

- 25% Assignments
- 15% Participation
- 35% Midterms
- 25% Final Exam

Letter grades will be assigned on the scale A=90–100, B=80–89, C=70–79, D=60–69, F=0–59, with potential minor adjustments after considering the overall performance of the class and actual distribution of numeric scores. I will use “+” and “−” grades at my discretion. I do not assign WP or WF grades except in extreme circumstances.

University Policies

Academic Honesty

Students are expected to comply with the JMU Honor Code, available from the Honor Council website: [http://www.jmu.edu/honor/code.shtml](http://www.jmu.edu/honor/code.shtml). Simply put: don’t cheat, and report anyone you think has cheated. Academic dishonesty or plagiarism in any form will not be tolerated, and will result in an automatic zero for the assignment or exam.

In particular, you must work on programming assignments entirely on your own. You may request help on general topics from other students and friends. However, when doing so you must never refer to code written for programming assignments, either directly or indirectly. This means that, for example, you may not refer to code written for parts of the assignment, errors generated by compiling or running code written for the assignment, or the output generated by running code written for the assignment.

Representing someone else’s work as your own, in any form, constitutes an honor code violation. It is also a violation of the honor code to “render unauthorized assistance to another student by knowingly permitting him or her to see or copy all or a portion of an examination or any work to be submitted for academic credit.”
Adding/Dropping

You are responsible for enrolling in courses and verifying your schedule on MyMadison. The deadline for adding a semester course is Thursday, 01/29/2015 (signatures required after Tuesday, 01/20/2015). The last day to withdraw from a course with a W grade is Friday, 03/20/2015.

Disability Services

If you have a documented disability and will be requesting accommodations in this course, please register with the Office of Disability Services (http://www.jmu.edu/ods, Wilson Hall, Room 107, 540-568-6705). They will provide you with an Access Plan Letter to verify your need for services and make recommendations for the course. I will be happy to discuss your access plan with you.

Excused Absences

Students who are unable to attend class due to JMU sponsored activities (such as sports, band, academic competition, field trips, etc) or personal religious observances may request reasonable accommodations. Please notify me during the first week of class regarding potential absences so that we can determine alternative methods for you to complete the required work.

University Closings

For severe weather and other unexpected circumstances, watch for announcements relating to make-up work. See http://www.jmu.edu/JMUpolicy/1309.shtml for JMU’s cancellation policy. Although the schedule may adapt to canceled classes, assignment deadlines generally do not change.