

CS149 Syllabus

Introduction to Programming

Section 7

John C. Bowers, James Madison University

Course Information and Description

This is a course in formal problem solving using computer programming. You will learn how to solve problems precisely by describing *algorithms*, which are formal processes, or step-by-step instructions for starting with a problem you want to solve and producing a solution. You will also learn how to specify an algorithm using a formal language called a *programming language*. This language allows your solution to be precisely described in such a way that a computer can execute each step. Though learning how to write in a particular programming language presents difficulties for students the real challenge is not the particular language, but how to *think algorithmically* and understand how to solve problems exactly and specify your solution precisely. In this course you will learn algorithmic thinking by solving problems using the Java programming language. You will learn the basic tools of precise problem solving (variables, methods, decisions, loops, arrays, objects, etc.) used in imperative programming, and you will learn how to code these tools in the Java language.

Name	Dr. John C. Bowers
Office	ISAT/CS 217
Phone	540-568-8771
Email	bowersjc@jmu.edu
Office Hours	http://w3.cs.jmu.edu/bowersjc/#contact

Questions? Please direct questions on course content through Piazza. Other questions can be emailed to me directly.

You **do not need an appointment** to meet me at office hours as I will send out an announcement on Canvas if I cannot make scheduled office hours for some reason. You are also welcome to stop by my office outside of office hours, but then its a good idea to make an appointment in advance to make sure that I am available. Email me to make an appointment.

Methods of Instruction

Because programming is really problem solving, the best way to learn is by doing. Additionally, research has shown that students who learn material via active learning methods learn the material much better than those who simply sit and watch a professor lecture. For this reason we will make heavy use of two active learning based instructional strategies: *Process Oriented Guided Inquiry Learning*, or *POGIL*, (for Monday activities) and *Flipped Classroom* (for Wednesday and Friday labs). Your weekly routine will look like the following.

Monday

In class POGIL activity.

At home Work on programming assignment.

Tuesday

At home Reading and quiz. Work on programming assignment.

Wednesday

In class Structured lab activity.

At home Reading and quiz. Work on programming assignment.

Thursday

At home Work on programming assignment.

Friday

In class Less-structured lab activity.

At home Video and exercises. Work on programming assignment.

Each week will begin with an activity that is designed to help you learn the core concepts of programming and develop process skills. In preparation for Wednesday, you will read one chapter from the textbook and complete a short online quiz. I will use the quiz results to customize the instruction and clarify any misunderstandings about the course material. The two labs will apply concepts hands-on and allow you to practice programming when it's easy to ask questions. I will also provide a weekly video to reinforce concepts and optional exercises to help you prepare for exams.

Note

- Programming assignments (PAs) can take about eight hours to complete; that's why we give you two weeks to finish them. Do not wait until your second week to get started.
- **WORK SMARTER NOT HARDER.** Here's a method that less successful students employ to finish PAs. Wait until the last minute, then start working. Get stuck. Google for solution for 3 hours. Get unstuck. Work 20 minutes. Get stuck again. Google for solution for 3 hours. Etc. Finally turn something half complete in and get low score. **Successful students start the day a programming assignment is assigned.** Their schedule looks more like. Work for a bit two weeks before deadline. Get stuck. Ask professor simple question the next day. Get unstuck (notice that we've now just saved our student 3 hours of Googling). Work for a bit more that evening. Get stuck. Ask professor a quick question over email. Go to the gym for a few hours and get some ice cream afterwards. Notice professor has replied. Get unstuck. Etc. Turn in final version of code which passes all tests one day before the deadline. *We cannot help you if you wait until the last minute and you will spend an inordinate amount of time stuck on simple problems that could have been solved in 2 minutes with a conversation in class.*
- I am not available to help you outside of normal business hours (8a-5p M-F). Leaving things to the last minute means that you will be on your own.

Course Material

The required textbook is

Allen Downey and Chris Mayfield (2017). *Think Java: How to Think Like A Computer Scientist*, 2nd Ed. Green Tea Press, Needham, MA.

This textbook is freely available online in a variety of formats at <https://w3.cs.jmu.edu/cs149/book/>

Online Interaction

The main course website is <https://w3.cs.jmu.edu/cs149> which lists material from all sections and professors. Material unique to our section is available on the Canvas page.

- Please use Piazza to discuss general questions about the course content and get help from instructors, TAs, and other students. Make sure you read the Piazza policies before you post to make sure you are in keeping with the JMU Honor Code.
- The main content for the cost is hosted on the course's Canvas page at <http://canvas.jmu.edu>
- Our online submission system for assignments and labs is Web-CAT, which can be found at <https://webcat.cs.jmu.edu>
- I prefer you to ask questions via Piazza as long as they don't involve actual source code. That way, everyone can benefit from the answers. If you need to ask more specific questions related to your code or project, you can email me or post a private Piazza message.
- Please do not send me Canvas messages, as I often miss them until much after you sent them.

Evaluation

Your final grade will be based on the following (with the weight given to each identified in parentheses).

- (15%) Early Exam
- (25%) Midterm Exam
- (35%) Final Exam
- (15%) Programming Assignments
- (10%) Activities, labs, and quizzes.

Note that students who do not receive at least a 60% on the final exam will receive a letter grade no higher than a C regardless of performance on the other parts of the course.

Office Hours

You may meet with Prof. Bowers during his scheduled office hours or you may schedule an appointment with him.

Course Policies

You are responsible for reading, understanding, and following all course policies.

Academic Honesty

You are expected to comply with the JMU Honor Code as stated in the Student Handbook and available from the Honor Council Web site <http://www.jmu.edu/.honor/code.shtml>. If you violate the Honor Code you will receive a significantly reduced or failing grade *in the course*. We may use automated tools on any assignment, at any time, to detect inappropriate collaboration and to determine the originality of submissions.

Adding/Dropping

You are responsible for enrolling in courses and verifying your schedule on MyMadison. The deadline for adding a semester course is Thursday, 9/14/2017 (with signatures required after 9/5/2017). The last day to withdraw from a course with a W grade is 10/26/2017. I will not give “WP” or “WF” grades to students requesting a drop after the deadline except in extraordinary circumstances.

Disability Accommodations

If you need an accommodation based on the impact of a disability, you should contact the Office of Disability Services (Wilson Hall, Room 107, www.jmu.edu/ods, 540-568-6705) if you have not previously done so. Disability Services will provide you with an Access Plan Letter that will verify your need for services and make recommendations for accommodations to be used in the classroom. Once you have shown me this letter, we will sit down and review the course requirements, your disability characteristics, and your requested accommodations to develop an individualized plan appropriate for this course.

Religious Observation Accommodations

If you cannot satisfy a requirement of the course due to a JMU sponsored activity or for religious reasons you must let me know at least two weeks in advance. In some cases you will be required to make up the requirement; in other cases the requirement may be waived with suitable adjustment in grading criteria.

Inclement Weather Policy

This class will operate in accord with JMU’s cancellation policy available at <http://www.jmu.edu/JMUpolicy/1309.shtml>.

Changes to this Document

I reserve the right to change any information on this document or course materials at any time.