

# CS 149: Introduction to Programming

James Madison University, Spring 2018 Semester, 3 Credits

**Home Page:** <http://w3.cs.jmu.edu/weikleda/cs149s18>

## Class Times

Section 3: MWF, 10:10 – 11:15 Final Exam: Wednesday, May 2, 8:00-10:00 am

Locations: CS/ISAT 243(classroom) ISAT/CS 143 (Linux lab)

## Your Instructor

Dr. Dee A. B. Weikle  
[weikleda@jmu.edu](mailto:weikleda@jmu.edu)  
Office: ISAT/CS 205  
Phone: 540-568-5013



Office Hours: MF 2:30-3:30,  
W 2:30-4, Th 2-3  
(no appointment necessary)

Other times are available by appointment via email. You are welcome to stop by if my office door is open without an appointment and if I have time I will help you. I will rarely be in the office on Tuesdays though.

## Goals and Objectives

Official course description: Students learn fundamental problem-solving techniques using a modern programming language.

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

- 1) Explain fundamental programming concepts (e.g, variables, methods, decisions, loops, arrays, objects) using appropriate terminology.
- 2) Describe basic elements of high-level programming languages, including expressions, statements, functions, modules, and libraries.
- 3) Read and interpret software specifications and write source code from them.
- 4) Use automated software tools and processes to test your programs thoroughly.
- 5) Distinguish appropriate collaboration from cheating on assignments and exams.
- 6) Evaluate your own work for compliance with requirements and style guidelines.
- 7) Collaborate effectively with the majority of your peers
- 8) Develop correct and efficient algorithms to solve problems using computation.

## Methods of Instruction

If you're hoping for lectures day after day, you've signed up for the wrong class. Research has shown that active learning methods are more effective than passively taking notes. This course

uses two different instructional strategies: Process Oriented Guided Inquiry Learning (for Monday activities) and Flipped Classroom (for Wednesday and Friday labs). Often, Friday labs will be run using pair programming.

Here is the weekly routine: We will begin each week with a group activity to help you understand core concepts and develop process skills. You will then read from the textbook and complete a short online quiz. I will use the quiz results to customize instruction and clarify any misunderstandings about the course material. Wednesday will apply concepts hands-on and allow you to practice programming when it's easy to ask questions. Most weeks I will also provide a video to reinforce concepts and optional exercises to help you prepare for the exams. During the week, you should also be working on the current Programming Assignment. It is critical that you start these assignments early so that when you have some problem, you can spend a reasonable amount of time struggling, leave it and come back more rested or after having some questions answered.

***Please note:***

- In a three-hour course, you should expect six hours of homework per week. How you manage your schedule is up to you, but do spend some time each day on this course.
- Programming assignments (PA) can take about eight hours to complete; that's why they are due every two weeks. Don't wait until the second week to get started. Ask any student who has taken this class what that's like. To encourage an early start on the programming assignments, they will often have multiple parts due earlier in the week.
- While I will answer Piazza questions over the weekend, you should realize I may not answer in the timeframe you need. If you choose to complete assignments at the last minute or after the deadline, especially after the first PA, you have significantly decreased your chances of successful completion. I will make sure any questions posted over the weekend are answered on Monday at the latest. Please ask questions using Piazza first if at all possible. I have it set up so that I get an email when a question is posted to Piazza, so emailing me is not quicker and by posting to Piazza you will have a chance of being answered by a classmate, TA, or another faculty member. Email should be reserved for questions whose answers would only benefit you personally or only I would know the answer to.
- Undergraduate assistants are generally available in the labs from 5:00 PM to 11:00 PM on Monday through Thursday and 1:00 PM to 11:00 PM on Sunday. A detailed schedule will be available 2-3 weeks into the class. Do not rely on them to fix your code—you won't have TAs during exams. Do go to TAs and come to my office for clarification on concepts, ideally before you are working on the PA.

**Required Textbook**

The required textbook for CS149 this Spring will be "Think Java: How to Think Like a Computer Scientist" version 6.6.0 by Allen Downey and Chris Mayfield, available on <http://greenteapress.com/wp/think-java/>. DO NOT PURCHASE THIS BOOK ONLINE. PDF and HTML versions will be made available for free on the course website. You may optionally purchase a spiral-bound copy at the JMU Bookstore.

## Recommended Textbook

Also recommended for those planning on taking CS159 is the textbook, Starting Out With Java from Control Structures through Objects, 6<sup>th</sup> Edition, by Tony Gaddis. You may use whatever version (paperback, eBook, or standard textbook) that will work best for you. If you have the funds you might consider a new copy or purchasing access to the video materials. I recommend this book, primarily for those who are intending to be computer science majors because it has been used frequently for this course and will likely be used for the next course in the sequence, CS159. Getting familiar with the book this semester is likely to help in CS159 and it provides more detailed examples of different control structures as you are learning.

## Online Interaction

If you need to schedule an appointment or have a personal inquiry, don't hesitate to email me directly. However, do not send me messages via Canvas—I have disabled its notifications. Please bookmark the following websites:

- <https://w3.cs.jmu.edu/weikle/cs149s18/>

The detailed schedule page on the course website will provide links to activities, labs, readings, videos, and assignments. This should be available by the end of the first week.

- <https://canvas.jmu.edu/>

We will use Canvas primarily for submitting quizzes and labs, posting solutions, and communicating grades. I intend to have the majority of materials available on the website above, but Canvas will point to those web resources and have the precise due dates. Canvas dates override and discrepancy with the few posted web dates.

- <https://piazza.com/>

If you have questions about course content or assignments, post them on Piazza rather than email me or TAs directly. This will help significantly in getting a timely answer as more people might answer. I get email automatically when a question is posted to Piazza.

- <https://webcat.cs.jmu.edu/>

Web-CAT is an automated submission system we will use for some of the assignments and labs.

- <https://www.jgrasp.org>

jGRASP is an independent development environment that you can use to develop your code and programming assignments. You may use a different development environment, but this is the one I intend to support in class.

## Methods of Evaluation

The different sections of CS149 are using the same methods of evaluation.

## Participation

Class activities, labs, and concept quizzes will include a graded component. Labs will be due by 11:00 PM on the day they are assigned. You are encouraged to work with other students on these types of assignments. I will drop at least two of your lowest scores in this area to allow for

unforeseen circumstances. *No credit will be given for labs if you are not in class, but you should still complete them to learn the concepts.* Note that this policy may be different in other sections.

### **Assignments**

There will be 5-6 programming assignments over the course of the semester. The source code you submit must be entirely your own work. When talking to other students or friends, you may look at code to help debug, but you must not write code or accept code of any kind from another student. If you receive help from an instructor or lab assistant, you must make note of it in the comments of the relevant source files. Details of how to do this will be provided in a style guide for the programming assignments. Programs will be graded on correctness, documentation, and overall code quality.

### **Late Work Policy**

Programming assignments will be due on Fridays at 11:00 PM. Late submissions will be docked 15% per day for up to two days (Saturday and Sunday), after which they will no longer be accepted. Situations may arise that make it difficult for you to complete an assignment on time, such as illness, hardware failures, or travel problems so make sure and start the programs on time. Make sure and talk with me if you see that you will have a conflict with getting the programming assignments done.

### **Academic Honesty**

If you violate the University's Honor Code (<http://www.jmu.edu/honorcode/code.shtml>), you will receive a reduced or failing grade in the course, other penalties may be imposed, and the violation will be reported to the Honor Council. Automated tools may be used on any assignment, at any time, to detect inappropriate collaboration and to determine the originality of submissions.

### **Midterms/Final**

We will have two midterms in class and a comprehensive exam during finals week. Each exam will be two hours: one for written problems, one for coding problems. If you must be absent during an exam for a legitimate reason, you must contact me at least one week beforehand to make special arrangements. Failure to make prior arrangements for a missed exam will result in a zero grade.

### **Grading Criteria**

Your course grade will be based on:

- 20% Programming Assignments
- 15% Participation
- 35% Midterms (15% Exam 1, 25% Exam 2)
- 30% 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.

## **Important Notes**

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 B– or better grade to continue on to CS 159.

## **University Policies**

### **Adding/Dropping**

You are responsible for enrolling in courses and verifying your schedule on MyMadison. The deadline for adding a semester course is Thursday, 01/25/2018 (signatures required after Tuesday, 01/16/2018). The last day to withdraw from a course with a W grade is Friday, 03/16/2018.

### **Disability Services**

If you have a documented disability and need accommodations in this course, please register with the Office of Disability Services (<http://www.jmu.edu/ods>, Student Success Center, Room 1202, 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. I highly recommend that if you had accommodations in high school that you document that immediately. It will likely help you learn better and have a more successful college experience.

### **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. Since I will post all deadlines and work, I expect you to have access to all materials necessary without coming to see me when unavoidable absences occur. You are however encouraged to stop by and get whatever assistance and perspective might be beneficial.

### **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 rarely change**. Also, since I live in Crozet, an hour away. Many students think that I will not come in inclement weather. I often stay in Harrisonburg if snow or other weather may keep me from teaching or another faculty member will substitute for me. So, follow the university closing information!