CS 101: Introduction to Computer Science

James Madison University, Fall 2021 Semester, 3 Credits

Home Page:
http://w3.cs.jmu.edu/cs101

Classroom:
ISAT/CS 236 on Tuesday/Thursday

Section 1: 9:40am – 10:55am
Section 2: 11:20am – 12:35pm

Course Instructors

Prof Sharon Simmons
simmonsj@jmu.edu

Office: ISAT/CS 221

Office Hours:
In-person or zoom
https://jmu-edu.zoom.us/j/86362118510
Tuesday: 1:00 pm – 3:00 pm
Wednesday: 2:00pm - 4:-00pm
and by appointment

Prof Paige Normand
normanap@jmu.edu

Office: ISAT/CS 246A

Office Hours:
Monday: online 10:00am - 12:00pm
(https://jmu-edu.zoom.us/my/paigenormand)
Thursday: in-person 2:00pm - 4:00pm
and by appointment

Catalog Description

How to think like a computer scientist. Topics include an overview of the context of computing, computational operations, computational devices, algorithms and data structures, the storage and transmission of data, the presentation of information, and the limits of computing. Students learn about the design and implementation of computational systems, the value of abstraction, problem solving, and the ways in which computation impacts society. There are no prerequisites.

Required Textbook

Glenn Brookshear and Dennis Brylow (2015). *Computer Science: An Overview*, 12th Edition. Pearson Education, Upper Saddle River, NJ.

ISBN: 0133760065

https://www.amazon.com/Computer-Science-Overview-Glenn-Brookshear/dp/0133760065/ref=sr_1_2

You may find on other sites as well.

Other editions such as the 11th or 13th are acceptable. However, you will be responsible for any material presented in class that may only appear in the 12th edition. You will NOT need an access code.

Learning Objectives

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

- Explain how data are represented, stored, and manipulated by computer hardware.
- Use abstraction and decomposition when reasoning about complex systems and problems.
- Describe how data can be transmitted over networks and the security concerns that arise.
- Apply computing tools and techniques to solve problems at multiple levels of abstraction.
- Connect the concern of cybersecurity with the Internet and systems built on it.
- Discuss the impact of computing within economic, social, and cultural contexts.
- Implement an algorithm that uses repetition and conditionals in a high-level language.
- Collaborate with others to gain insight, interpret data, and solve problems using computation.
- Summarize the role of algorithms, data structures, and languages in computer programming.
- Use metacognitive strategies (e.g., the study cycle) to make your learning more effective.

Methods of Instruction

This course uses a "flipped classroom" approach for a significant portion of the scheduled class time. Instead of listening to long lectures during class time and doing homework individually, you will learn some content on your own and complete assignments during class. You may not be accustomed to this approach, but if you *trust in the process* you will learn so much! Most weeks will focus on a single chapter from the textbook. Please see the course canvas site for weekly format and due dates CS101 Canvas site. The canvas site has all the information regarding weekly due dates. Note that exercises and quizzes have a **10pm** due date time and not midnight as you might have in other courses. This time is strictly enforced.

There are **three exams** in the course as indicated on the syllabus. The exams will be a timed exam on canvas and will available from Friday starting at 10pm until **Monday at 5pm.** Labs are due Friday at noon. Please see below about all the deliverables in the course.

How to Succeed

- *When you attend lecture:* Take notes during lecture and rewrite notes after lecture.
- *When you read the book:* For each paragraph, write a short sentence that explains the main idea in your own words.
- *When you watch videos:* Pause, rewind, and take notes about the main concepts; make connections to the reading.
- *When you start the lab:* Read through all of the instructions and make a list of questions to ask at the beginning of class.
- *Before you start the exercises:* Review the questions at the end of each section. The answers are in the back of the book.
- *When you prepare for the exam:* Review lecture notes, videos, labs, exercises and quizzes since the last exam.

Textbook Readings

We will maintain a detailed schedule with assigned readings, video lectures, and other resources on the course home page as the semester progresses. You are strongly encouraged to *study* (i.e., understand well enough to teach) the designated textbook sections, even if some material is not "covered" in class. It is not expected that you read every single word, although in many sections that will be most effective. The textbook will be a valuable resource for succeeding in the course—otherwise, we wouldn't have required you to get a copy.

In Person and Online Interactions

We are currently planning all lectures in person on the scheduled class time. You are expected to attend all scheduled class times. Your instructor office hours will primarily be in person in your professor's office. Some office hours may be held on Zoom. You must use the JMU license of Zoom and your JMU eid to log onto Zoom.
We will use Canvas to make announcements, submit assignments, and manage grades. All class-related materials (e.g., syllabus, schedule, videos, tutorials, labs) will be posted on the course home page and linked from Canvas for convenience.

Assessment and Grading

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. The instructors will use "+" and "–" grades at their discretion.
All the work of the class is worth 950 points.

Labs: Total of 150 points which is (15.8%) of your final grade

Most weeks include a lab experience that helps you apply what you have learned in fun and practical ways. These are **due Friday at noon.** There will be a total of 10 labs, each worth 15 points so 150 points of your final grade. The labs will take about 60–90 minutes to complete. A lab will

assigned at the beginning of the week and it's important that you begin working on them so you can come to class with questions. Submissions must also be a pdf and submitted via canvas.

Exercises: Total of 150 points which is (15.8%) of your final grade

Each week includes two sets of exercises: A and B. Set A is worth 5 points and Set B is worth 10 points. There are 10 two-set exercise, so all exercises are worth 150 points. Set A is due by Tuesday at 10pm of the associated week. Set B is due by Thursday at 10pm of the associated week. Exercises sheets are available on the detailed schedule. They are available as a pdf. You can print these out and write out answers on the print out; edit the pdf, or you can write answers on paper with the answers being clearly numbered. To turn in, either scan or take a photo and then convert to a pdf for submission. If editing a pdf, save and turned in the pdf. A pdf is required and must be submitted via canvas. When you save your pdf, you **must include your name in the filename**.

Quizzes: Total of 150 points which is (15.8%) of your final grade

We will have an online canvas quiz at the end of most weeks, due Friday at 10pm. Each quiz is worth 15 points and there will be 10 quizzes, so a total of 150 points. The quizzes include vocabulary matching, multiple choice, and fill in the blank questions. Many of these questions will be similar to ones at the end of the chapter, so it pays off to practice them during your study time. The quizzes are open notes and book. You may take the quiz twice and receive the higher score.

Exams: Total of 300 points which is (31.6%) of your final grade

There is an online exam after we complete 4 weeks of course material. There will be a total of three exams. Each is worth 100 points so a total of 300 points. Each exam will be timed, and the work must be done individually. Canvas will keep track of the timer. You may use your notes but with a time limit, your notes should only be used as a quick reference so it is important you internalize the material as preparation for the exam. Exams will be made available Friday at 10pm and available until Monday at 5pm. Once you start the exam, you must finish in the allotted time. This will be automated so you need to make sure that you have a quiet reliable online environment to take the exam.

Projects: Total of 200 points which is (21%) of your final grade

During the middle and end of the semester, you will be required to complete a substantial project. Both of these "performance tasks" will be collaborative in nature and done in groups. You should view them as a take-home midterm and final exam. Details will be available on the detailed schedule.

University Policies

COVID classroom expectations

This course will be taught in person as long as advisable by the CDC and JMU. You are required to wear a mask. Both of your instructors are vaccinated and we will wear a face mask to help prevent the spread of the virus and to be safe. Please be respectful and thoughtful of your classmates and others. We really want to stay in person and will be extra careful to stop the spread. Please see Stop the Spread.

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.

Adding/Dropping

You are responsible for enrolling in courses and verifying your schedule on MyMadison. The deadline for adding a semester course is Thursday, 09/03/21 (signatures required after Friday) The last day to withdraw from a course with a W grade is 10/27/21. Please see Deadlines

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. We 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 the instructor during the first week of class regarding potential absences so that we can determine alternative methods for you to complete the required work.

Late Work Policy

For exercises and labs: By submitting work by the due date, you have the opportunity to earn full credit. You do have a grace period of 12 hours to submit later BUT will automatically be deducted 30%. For quizzes and exams: These must be completed by the due date. In extreme, documented circumstances (e.g., hospitalization), the instructor will make reasonable accommodations after consulting with the student.

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.

Your Well-Being

As a college student, there may be times when personal stressors interfere with your academic performance and/or negatively impact your daily life. If you or someone you know is experiencing mental health challenges at James Madison University, please connect with the Counseling Center located within the Student Success Center on the 3rd floor. You can learn more about available services by visiting https://www.jmu.edu/counselingctr or calling 540-568-6552. Their services are free and confidential. Other available support resources to consider include, but are not limited to, the Office of the Dean of Students, the Health Center, and Learning Strategies Instruction.