CS109: Intro to Computer Programming

Part B

(Spring 2025)

1 Course Basics

Instructor

Professor	Email	Office	Section	Location	Start/End Dates
Parastoo Kamranfar	pkamranf	RSCH 361	Lecture 001 17168 MW 9:00 – 10:15 AM	Horizon Hall 1012	01/21/2025- 05/14/2025
			Lecture 002 17169 MW 12:00 – 1:15 PM	James Buchanan Hall D023	
			Lab 201 17170 Thursdays 1:30 – 2:20 PM	Innovation Hall 132	
			Lab 202 17171 Thursdays 12:30 – 1:20 PM	Planetary Hall 129	

Course Overview:

This course provides rigorous introduction to problem solving through development of computer programs. It focuses on identifying algorithmic patterns in problems, describing problem solutions in high-level pseudocode, then implementing in a procedural programming language. Basic programming concepts are covered in detail including expressions, control structures, simple data types, and input/output. Program testing and debugging are discussed to verify that problems are solved correctly. This is a course 3-credit course.

Student Learning Outcomes

1. Students will be able to exhibit an ability to use procedural programming language concepts including expressions, decision statements, simple data types, Boolean logic, input/output, loop constructs, and procedures.

2. Students will be able to exhibit an ability to combine programming techniques to solve problems of varying levels of difficulty.

3. Students will be able to exhibit an ability to refine computer programs through testing and debugging to ensure proper operation.

4. Students will be able to exhibit an ability to find and understand programming language documentation to learn new information needed to solve programming problems.

Prerequisite

CS108 and Calculus Readiness

1.1 Textbook

Required - zyBooks Online Textbook

- Sign in or create an account at **learn.zybooks.com.**
- Enter zyBook code: **GMUCS109KamranfarSpring2025.**
- Subscription is **$51.**
- Students that **retake the course** contact **support@zybooks.com** to have the book added to your library for **free.**
- Students may begin subscribing on January 07, 2025, and the cutoff to subscribe is May 01, 2025. Subscriptions will last until May 29, 2025.

Optional - Wentworth, Elkner, Allen, & Meyers, *How to Think Like a Computer Scientist: Learning with Python 3*. Available free online at: http://openbookproject.net/thinkcs/python/english3e/

1.2 Piazza

- Announcements and Discussions will be on Piazza.
- All correspondence will go through Piazza. You can send private messages to the instructors (visible to all professors, GTAs, and UTAs) as well as post public questions visible to all students, collaborate on responses, and tag everything by topic.
- Unless you have a confidential matter to discuss directly with an individual professor/TA, please do not email us directly -- use a private piazza post. *Project help questions sent via email are of extremely low priority, as they were sent to the wrong place and will most likely be responded to with "please post on Piazza".*
- **The discussion board on Piazza is required reading for all programming assignments**. You MUST read the discussion board daily for clarifications and potential updates.

1.3 Blackboard

- Course schedule, office hours, course syllabus, description of assignments, and lecture slides and/or lecture videos will be posted on Blackboard.
- All programming assignments will be submitted (per published deadlines) via Gradescope.
- Labs will be submitted via Blackboard.
- All grades will be posted to Blackboard.

2 Grading

Category	Points	Percent	Notes
Reading	----	5%	Make sure you are logged into zyBooks to get credit for reading completion.
Class Participation and Attendance	----	5%	Make sure to attend every lecture and lab class!
Labs	13 total 10 Points Each	10%	Drop 2 Lowest
Programming Assignments	6 total 50 Points Each	35%	No drops! All 6 assignments counted towards final grade.
Midterm Exam	100 Points	20%	See section 2.3 on Exams
Final Exam	100 points	25%	**Must pass final exam (60%) to pass the class.** See section 2.3 on Exams

Assessment

- A+ (>= 98.0%) A (>= 92.0%) A– (>= 90.0%)
- B+ (>= 88.0%) B (>= 82.0%) B– (>= 80.0%)
- C+ (>= 78.0%) C (>= 72.0%) C– (>= 70.0%)
- D (>= 60.0%)
- F (< 60.0%)

There will be no make-up or extra-credit assignments at the end of the semester; your grade should be a measure of your semester-long progress.

2.1 Assignments

Assignments are a significant portion of your grade. You should not expect to be able to finish them in one sitting. A programming assignment might take multiple sessions of coding, with questions asked along the way. This is the practice you need to learn, master, and internalize various concepts of the course. Don't be surprised if you're spending 5-20 hours on each one.

- **Blackboard Submission**

  Activities and assignments in this course will regularly use the Blackboard learning system, available at https://mymason.gmu.edu. *Students are required to have regular, reliable access to a computer with an updated operating system and a stable broadband Internet connection.*

  - All assignments are to be submitted to Gradescope/Blackboard. You can submit your work an unlimited number of times to Gradescope/Blackboard prior to the assignment deadline, and by default only the last version will be graded.

- Turning in the wrong files will likely result in a zero. You can and should download your submitted attempts to verify that you turned in a working/correct copy.
- Blackboard being unavailable is not an excuse for turning in a late assignment; in the rare situation that the website is somehow unavailable or giving the student an error, the student MUST email their submission to their GTA (cc Professor) before the deadline, otherwise it will be considered late.
- Catastrophic computer failure will not be cause for an extension. Use a backup service such as Drobox (or any cloud service), emailing yourself, storing to a USB drive, whatever it takes. Every semester multiple student's computers die, are stolen, or otherwise 'lose' their files. Don't be the student who forgot to (frequently) back up your work!

All course materials posted to Blackboard or other course sites are private to this class; by federal law, any materials that identify specific students (via their name, voice, or image) must not be shared with anyone not enrolled in this class.

- **Deadlines and Emergency-Days**
  - Each assignment has a posted deadline.
  - The latest you can turn in a programming assignment is 24 hours after the posted deadline (with a small penalty), no exceptions. Penalty: MIN(your score, 90).
  - Turning in 1 minute late and turning in 23 hours and 59 minutes late are treated the same (and therefore there are no "half emergency-days" and no "partial late penalties").

- **Broken Code == Bad Scores**
  - After the first two programming assignments, any code turned in that does not run (immediately crashes due to errors), specifically on Python 3, will receive at most 50%. **No exceptions.** At this point, if the grader can quickly fix your code, you might get some points back. If the grader cannot immediately spot and fix the issue, you might not get any points at all.
  - Turning in code that runs is a big deal!

- **Honor Code: Special Notes for Assignments**
  - Assignments are considered individual efforts, therefore no sharing of code and/or discussion of problem solutions are allowed with anyone except the TAs or the professors. Student submissions will be manually and automatically assessed for cheating. **You may not look at or otherwise view or discuss any other individual's code, pseudocode, or algorithms.**
  - You may not use any Internet resources to create code or algorithms, besides the textbooks, the slides, and Piazza, unless otherwise specified. However, you are free to look up the syntax errors you encounter online, to gain an understanding of what the syntax error means. The assignments we're doing this semester can be directly solved using techniques discussed in class, and no outside material is needed unless otherwise noted.
  - **It is your responsibility** to lock your computers with a password, to not post your code to websites like Pastebin that are publicly accessible, to guard your USB drives and computers, to not upload your files to someone else's computer, etc. You are liable for any access gained to your code.
  - See Honor code section below for more details.

2.2 e-book Readings

- zyBook readings are graded based on the completion percentage of activities **before the designated deadline** of each chapter.
- See the schedule page in Blackboard for reading assignment due dates.
- Make sure you're logged in to get credit for reading completion.
- Optional subsections are not considered for zyBook reading.
- Please note that the zyBook reading is 5% of your final grade.
- Zybooks assignments are graded at the end of the semester.

2.3 Exams

- Exams are closed book/notes unless specified otherwise by instructor.
- The final exam is cumulative. If you perform better on the final exam than your midterm exam, we will replace the midterm exam grade with the final exam grade. Because of this, missed midterm exams will not be made-up but instead replaced with the final exam grade.
- If you know in advance that you are unable to take the final exam by the deadline posted for a valid and unavoidable reason (such as a scheduled surgery, etc.), you must notify the professor at least one week before the scheduled exam date to make arrangements for a make-up.
- If you miss a final exam deadline due to a university-accepted excused absence (such as an illness or car accident the day and time of the exam), you must notify your professor within 24 hours of your absence to make arrangements for a makeup. You will also need to provide proof of the excused absence. Failure to follow either of these policies will result in a zero on the final exam.
- Per departmental policy, you must pass a significant exam threshold to receive a passing grade in this class, regardless of your performance on other assignments. Failing the final exam (<60.0%), will result in a failing grade (F) for the entire course unless you have achieved an average exam score >= 60%. This average score is calculated as a **weighted** average of your exam scores. In short, in 99/100 cases, **you must pass the final exam to pass the course.**

2.4 Contested Grades

- If you feel points have been incorrectly deducted, contact the grader. For all assignments that is your GTA. For exams, that is your professor. Contesting of grades on any/all submissions must be requested within one week of receiving the grade (on Blackboard or Gradescope). No grade changes will be considered after that deadline.

3 Office Hours and Discussion Board

There is support available to you outside of lecture time in the form of office hours and the online discussion board (Piazza). If you are having difficulty on an assignment, we encourage you to reach out **as early as possible**. That said, to ensure fairness and facilitate learning, we have some basic rules for seeking help outlined below. Please note that Piazza is a discussion forum for you, the students, to discuss the course and the course material. There will be UTAs assigned to check on this forum regularly and try to moderate the discussion, but this is NOT a replacement for office hours, lecture with your professor, or labs.

3.1 Rules for Office Hours

- Students must use their Mason email account to receive important University information, including communications related to this class.
- We will not respond to messages sent from or send messages to a non-Mason email address.
- Please indicate your name and what course you are referring to in your email.
- Please give 48 hours (usually 24 hours or less) for faculty to respond to email on weekdays. Emails sent on the weekend will be responded to on the following Monday.
- For students seeking help with assignments during office hours, students must identify where they believe an error to be before seeing the TA or instructor.
- For more general assignment questions, students must bring their own pseudocode to office hours before the TA or professor can help you.
- Under no circumstances will the professor or GTA reveal any code at any time during office hours. Students must make significant individual effort on all programming assignments before coming to see a GTA/professor. **Waiting until the last minute, in the expectations that the entire programming assignment will be explained in one office hours session, is not feasible.**
- Office hours are often crowded - do not rely on them for last minute help, as we cannot guarantee that we will be able to spend significant time with every student.
- If you have any questions about what you are/aren't permitted to do on a programming assignment, and you and the TA cannot find the answer written somewhere, you should ask your professor. **"So-and-so said" will not be an accepted as a reason for grade re-evaluations** (unless "so-and-so" is your professor).

3.2 Rules for the Discussion Board (Piazza)

- Students are encouraged to use the discussion board, Piazza, to ask and answer questions about assignments, labs, course material, etc.
- No sharing answers or code solutions to assignments on the discussion board. See Honor code section below for more details.
- Students can post questions and code privately, although the instructor reserves the right to make any post public, so that other students can see the responses.
- For students wishing to post their code privately to Piazza, the same rules apply as when coming to office hours; if you have code written, you must produce at least one failing test case where you have identified what line number is giving you problems.
- UTAs will be assigned to moderate the student discussion, help review student answers, answer private questions, and address questions which have not received a student answer. Therefore, responses to questions can be expected **within 24 hours**, though often much sooner.
- Statements made on the discussion boards, even by TAs and especially by other students, should NOT be considered the definitive word on the subject unless it is verified by your professor (in the assignment description, in class, posted on Piazza, etc.). The UTAs can flag professors if/when clarifications are needed.
- If you have any questions about what you are/aren't permitted to do on a programming assignment or exam, and you/others cannot find the answer written somewhere, you should ask your professor. **"So-and-so said" will not be an accepted as a reason for grade re-evaluations** (unless "so-and-so" is your professor).

4 Honor Code

- The honor code at George Mason is an important part of our academic culture. A degree from this institution should be a direct measure of your own progress and abilities, and as such, at all times we must ensure that all work that should be your own is your own.
- All students are expected to abide by the GMU Honor Code. This policy is rigorously enforced.
- The computer science department has an CS Honor Code Policies to understand better what constitutes cheating in the CS setting. It clarifies some scenarios that are unique to our sort of assignments. Note that the CS department doesn't have any "extra" policy for the honor code on top of the university's, this document merely helps you to understand how the honor code applies to programming and CS, but it doesn't restrict it at all.
- We take the honor code quite seriously. Any attempts at copying or sharing code, algorithms, or other violations of the honor code simply will not be tolerated. Cheating will be prosecuted and result in a notification of the Honor Committee as outlined in the GMU Honor Code. **Sharing, collaboration, or looking at any code or algorithm related to programming assignments that is not your own is considered cheating. This includes using code found on the internet.**
- As seductively simple as it may seem to just copy and paste work from a friend, or even to just work on the assignment on your own machines next to each other, remember that it is just as easy to compare your work automatically and electronically, and discover the similarities in text and structure. We use automated software to flag suspicious cases, and then review them to find the cases that must be submitted to the Office of Academic Integrity.
- The **use of AI tools** (including but not limited to Copilot, ChatGPT) to aid in the completion of graded assignments/exams, and the use of solutions which are derived directly or indirectly from AI prompts, is considered unauthorized assistance and is strictly prohibited under the honor code.
- **Confirmed cases of cheating result in a final grade of an F in the course.**
- Please read Understanding the Honor Code - Dr. Snyder's thoughts about the purpose of the honor code in a computer science course.
- Sharing of instructor-created materials, particularly materials relevant to assignments or exams, to public online “study” sites is considered a violation of Mason’s Honor Code. For more information, see the Office of Academic Integrity’s summary of information about online study sites.
- There are opportunities to study, work, and learn together throughout this course - zybook questions, lab exercises, and more. Mostly you will need to work independently for any sort of "test" and for homework assignments.

5 University Policies

- There is a limit of two graded attempts for this course. A W does not count as a graded attempt. Please see the University Catalog and consult with your academic advisor if you have any questions.
- Gender Identity and Pronoun Use: if you wish, please share your name and gender pronouns with us and how best to address you in class and via email. You can update your chosen name and pronouns here.
- Disability Services at George Mason University is committed to providing equitable access to learning opportunities for all students by upholding the laws that ensure equal treatment of people with disabilities. If you are seeking accommodations for this class, please first visit http://ds.gmu.edu/for detailed information about the Disability Services registration process.

Then please discuss your approved accommodations with me. It is your responsibility to email your accommodation letter to your professor. Disability Services is located in Student Union Building I (SUB I), Suite 2500. Email:ods@gmu.edu | Phone: (703) 993-2474.

- George Mason University, an intentionally inclusive community, promotes and maintains an equitable and just work and learning environment. We welcome and value individuals and their differences including race, economic status, gender expression and identity, sex, sexual orientation, ethnicity, national origin, first language, religion, age, and disability. As a member of the George Mason University community, the Computer Science department plays an integral role in building an educational environment that is committed to anti-racism and inclusive excellence. For more information on how to continuously cultivate the practice of anti-racism, see this guide from the National Museum of African American History and Culture on how to be anti-racist: https://nmaahc.si.edu/learn/talking-about-race/topics/being-antiracist.
- Title IX: As a faculty member and designated "Responsible Employee," I am required to report all disclosures of sexual assault, interpersonal violence, and stalking to Mason's Title IX Coordinator per university policy 1412. If you wish to speak with someone confidentially, please contact the Student Support and Advocacy Center (703-380-1434) or Counseling and Psychological Services (703-993-2380). You may also seek assistance from Mason's Title IX Coordinator (703-993-8730; titleix@gmu.edu).
- Student Support Resources on Campus: https://stearnscenter.gmu.edu/knowledge-center/knowing-mason-students/student-support-resources-on-campus/.
- Incomplete Grades: https://chssundergrad.gmu.edu/other-forms/incompletes.
- Campus Closure due to Weather: If the campus closes or class is canceled due to weather or other concern, students should check Blackboard/Piazza for updates on how to continue learning and information about any changes to events or assignments.

Safe Return to Campus Statement: *All students taking courses with a face-to-face component are required to follow the university's public health and safety precautions and procedures outlined on the university Safe Return to Campus webpage (https://www2.gmu.edu/safe-return-campus).*

6 Mental Health

- What is listed on the syllabus are our/Mason's usual course policies. However, this is not a "usual" time. We fully understand that each of us may face new obstacles, or old obstacles in novel ways, during this time. Please communicate with us if such things are getting in your way in this class. **Our goal is to facilitate your growth and success in this strange and uncertain time**; we can only do that if you tell us what is happening.
  - If you are experiencing feelings of anxiety, panic, depression, sadness during the semester, Student Health Services and Counseling and Psychological Services Offices (703-993-2380) provides a range of resources to assist and support you.
  - Students can call (703-993-2831) or walk-in during open hours to schedule an appointment to talk with a health care provider. If you or someone you know experiences a mental health crisis or emergency, seek help immediately. Call 911 for local emergency services, the National Suicide Prevention Lifeline (1-800-273-8255), or text the Crisis Text Line (741-741) anytime.
  - We believe we learn best when we can show up as whole and healthy people. To learn effectively we need to have basic security: a roof over our head, a safe place to sleep, a stable place to live, and enough food to eat. If you are struggling to meet any of these basic needs, visit our campus food pantry (https://ssac.gmu.edu/patriot-pantry/), or reach out to other Mason resources https://learningservices.gmu.edu/campus-resources/. Remember, asking for

assistance and advocating for yourself is an important part of your collegiate experience. **YOU** are not alone.

General Tentative Schedule

This **tentative** schedule contains all the readings, intended lecture topic pace, labs, programming assignments and dates as of the start of the semester. **We may drift ahead or behind the planned timing** (especially if the weather or anything else causes any cancellations), so take it as an estimate and **always overridden by announcements**.

Reading Assignments Schedule:

- ZY readings refer to our online zyBook textbook. Make sure you are logged in to zybooks.com to get credit for reading completion!
    - Recommended: complete the readings before class; the lectures and labs will help you solidify the materials far better than if you are reading them after the fact.
- LANG readings refer to the Python Language Reference (online, free).
- LIB readings refer to the Python Standard Library (online, free).
- Slides and announcements are posted on Blackboard and/or Piazza.

- Last day to Add: Jan 28th
- Last Day to Drop with 100% Tuition Refund: Feb 4th
- Last Day of Class: May 5th
- **Spring 2025 Final Exam Schedule here**
- **Spring 2025 Final Exam Locator here**
- **Other Important Dates found here**

CS109 Spring 2025 Tentative Schedule

Week	Start Date	Lecture	Labs	Assignments Assignments are always due by Monday at 9:00 AM	
				ZyBook Reading (ZY)	**Programming Assignment (PA)**
1	Jan 20	• Syllabus Review • CS108 Review: Python Basics Function Basics Testing/Debugging	Lab 1	None	No Programming Assignment
2	Jan 27	• Continue CS108 Review • Multidimensional Sequences	Lab 2	**ZY 1 (Lists)** LIB (4.6.3) mutable sequence operations **Due Feb 3rd by 9 AM**	PA1: Python Review **Due Feb 10th by 9 AM**
3	Feb 3	• Multidimensional Sequences • Mutability/Computer Memory Basics	Lab 3	None	Continue Working on PA1 **Due Feb 10th by 9 AM**
4	Feb 10	• Multidimensional Sequences • Mutability/Computer Memory Basics	Lab 4	**ZY 2 (Dictionaries)** LIB (4.10) Mapping Types **Due Feb 17th by 9 AM**	PA2: Multidimensional Sequences **Due Feb 24th by 9 AM**
5	Feb 17	• Introduction to Sets • Dictionaries	Lab 5	None	Continue Working on PA2 **Due Feb 24th by 9 AM**
6	Feb 24	• Dictionaries	Lab 6	None	PA3: Dictionaries **Study for Midterm Exam Next Week!** **Due Mar 10th by 9 AM**
7	Mar 3	First Meeting: Midterm Exam Review Second Meeting: **Midterm Exam on March 5th and 6th**	Midterm Programming Questions taken during your lab session this week	None	Continue Working on PA3 **Due Mar 10th by 9 AM**

	Mar 10	**Spring Recess (March 10 – March 16)**			
8	Mar 17	• User Defined Functions • User Defined Functions: Recursion	Lab 7	**ZY 3 (User-Defined Functions)** **ZY 4 (Recursion)** **Due Mar 24th by 9 AM**	PA4: Functions/Recursion **Due Mar 31st by 9 AM**
9	Mar 24	• User Defined Functions • User Defined Functions: Recursion	Lab 8	**ZY 5 (Files)** LIB (4.7.1) string methods **Due Mar 31st by 9 AM**	Continue Working on PA4 **Due Mar 31st by 9 AM**
10	Mar 31	• String Operations Review • Basic File I/O	Lab 9	None	PA5: File I/O **Due Apr 14th by 9 AM**
11	Apr 7	• Basic File I/O	Lab 10	**ZY 6 (Exceptions)** LANG (4.3 Exceptions, 7.8 raise statement) **Due Apr 14th by 9 AM**	Continue Working on PA5 **Due Apr 14th by 9 AM**
12	Apr 14	• Basic File I/O • Exception Handling	Lab 11	None	PA6: Exception Handling **Due Apr 28th by 9 AM**
13	Apr 21	• Exception Handling	Lab 12	**ZY 7 (Classes)** **Due Apr 28th by 9 AM**	Continue Working on PA6 **Due Apr 28th by 9 AM**
14	Apr 28	• Preview of Classes	Lab 13	None	None
15	May 5	• Final Exam Review	**No Labs**	None	**Study for the Final Exam!**
	Final Exam Period May 7 – May 14				

Section 001 Final Exam is on Monday 05/12 from 7:30 am – 10:15 am
Section 002 Final Exam is on Monday 05/12 from 10:30 am – 1:15 pm