

# CS108: Intro to Computer Programming

## Part A

(Spring 2023)

### 1 Course Basics

#### Instructor

Professor	Email	Office	Section
Dr. S. Gopalkrishna	slgopal	Buchanan D217E	001 & 003

#### Student Learning Outcomes:

1. Students will be able to solve basic problems using procedural programming techniques.
2. Students will be able to exhibit technological literacy by accessing appropriate digital resources, assessing their appropriateness and trustworthiness, and using the information to inform decisions.
3. Students will be able to exhibit understanding of privacy, security, and ethical concerns related to the field of Computer Science.

#### Mason Core IT Learning Outcomes:

- Students will understand the principles of information storage, exchange, security, and privacy and be aware of related ethical issues.
- Students will become critical consumers of digital information; they will be capable of selecting and evaluating appropriate, relevant, and trustworthy sources of information.
- Students can use appropriate information and computing technologies to organize and analyze information and use it to guide decision-making.
- Students will be able to choose and apply appropriate algorithmic methods to solve a problem.

#### Prerequisite

None

#### 1.1 Textbook

**Required** – There is no textbook to purchase this semester. You are expected to preRead for each week's topics from: [How to Think like a Computer Scientist: Interactive Edition](#)

#### 1.2 [Piazza](#)

- Announcements, Discussion, GTA/UTA contacts and office hours 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, course syllabus, description of assignments, and lecture will be posted on Blackboard.
- All assignments will be submitted (per published deadlines) via Blackboard or GradeScope.
- All grades will be posted to Blackboard.

## 2 Grading

Category	Percent	Notes
Weekly Assignments	40	Lowest grade will be dropped
Exam 1	15	
Exam 2	15	
Final Exam	30	<b>Must pass final exam to pass the class.</b>

- A: 89 and above
- B: 79 to 88
- C: 69 to 78
- D: 60 to 68
- 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 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 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 DropBox (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.
- 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. Unlike other CS courses, you may discuss approaches to solutions with your classmates, TAs, and the instructor. **HOWEVER**, students' code should be distinct. **If two or more students turn in programming assignments that are the same, an honor code violation will be submitted to the university's Office of Academic Integrity.**
- 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.

## 2.3 Exams

- Exams are cumulative.
- You may bring one **handwritten** 8 ½ x 11 page of notes to each exam. You may not copy and paste programs or classnotes as your note sheet. The page will be collected along with the exam.
- If you know in advance that you are unable to take an 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 an 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. Failure to follow either of these policies will result in a zero on the 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.

## 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, course, and section** 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 code at a 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.
- **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](mailto:titleix@gmu.edu)).
- Student Support Resources on Campus: <https://stearnscenter.gmu.edu/knowledge-center/knowning-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>). Similarly, all students in face-to-face and hybrid courses must also complete the Mason COVID Health Check daily, seven days a week. The COVID Health Check system uses a color code system and students will receive either a Green, Yellow, or Red email response. Only students who receive a “green” notification are permitted to attend courses with a face-to-face component. If you suspect that you are sick or have been directed to self-isolate, please quarantine or get testing. Faculty are allowed to ask you to show them that you have received a Green email and to wear a mask and are thereby permitted to be in class.*

## 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 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 the pandemic causes any cancellations), so take it as an estimate and **always overridden by announcements**.

## Tentative Schedule

	<b>TOPIC</b>	<b>READING (before class)</b>	<b>ASSIGNMENT</b>
Week 1 (1/23)	Programming Basics		PA1 – Getting Started Due Jan30
	Variables & Data Types	Chap1 & 2.1-2.5	
Week 2 (1/30)	Basic Arithmetic & Type Testing	2.6-2.7	PA2 - Arithmetic Due Feb2
	Using input()	2.8	
Week 3 (2/6)	Modules and Calling Functions	5.1-5.4	PA3 – Calling fns Due Feb13
	Errors and Debugging	1.7-1.10, 3.1-3.4	
Week 4 (2/13)	Calling & Writing Functions	6.1, 6.2, 6.6, 6.7	PA4 – Writing fns. Due Feb20
	Calling & Writing Functions		
Week 5 (2/20)	Boolean values and Expressions	7.1-7.3	PA3 - Conditionals Due Feb26
	One-way and Two-way Conditional	7.4, 7.5	
Week 6 (2/26)	Nested Conditionals & Review	7.6	
	<b>EXAM 1</b>		
Week 7 (3/6)	Chained Conditionals	7.7	PA4 - More cond'ls Due Mar3 (before break?)
	Boolean Functions	7.8	
<b>SPRING BREAK</b>			
Week 8 (3/20)	while loops	8.3, 8.8	PA5 – 'while' loops Due Mar27
	while loops		
Week 9 (3/27)	Lists	10.1-10.7	PA6 - Lists Due April3
	Lists and range()		
Week 10 (4/3)	for loops	4.4-4.7	PA7 – 'for' loops Due April10
	for loops	10.17, 9.10	
Week 11 (4/10)	for loops & review		

	<b>Exam 2</b>		
Week 12 (4/17)	List Mutability	10.8,10.9	PA8 – More lists
	Lists, Functions, Aliasing, Cloning	10.10-10.14	
Week 13 (4/24)	Binary Arithmetic		PA9 – number systems Due May 1
	Binary & Hexadecimal Arithmetic		
Week 14 (5/1)	strings	Chap 9	PA10 – Strings Due May 5
	strings		
Week 15 (5/8)			