CS112: Introduction to Computer Programming (Summer 2019)

1 Course Basics

Instructors:

Professor	Email	Office	Section
Michael Neary	mpneary	ENGR 4417	Wed 2:30 - 4:30 or by appointment

Graduate TA	Email	Office	Section
Hamza Mughal	hmughal2	TBD	TBD

Course Outcomes:

- An ability to use procedural programming language concepts including expressions, decision statements, simple data types, Boolean logic, input/output, loop constructs, and procedures.
- An ability to combine programming techniques to solve problems of varying degrees of difficulty.
- An ability to refine computer programs through testing and debugging to ensure proper operation.
- An ability to find and understand programming language documentation to learn new information needed to solve programming problems.

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:

C or better in MATH 104, 105, or 113 (or sufficient score on the math placement test).

1.1 Textbook: zyBooks

Required - Zyante online textbook.

- Sign up
- Enter zyBook code: **GMUCS112NearySummer2019**
- Subscribe using any credit card (Students that retake the course contact support@zybooks.com to have the book added to your library for **free**)

Quite optional - The Practice of Computing Using Python, second edition. William Punch and Richard Enbody. This is for students who want extra reading resources. You might be able to view a copy for free at Fenwick Library.

1.2 In-class Participation: Pytania

We will use an online tool to interactively answer questions in class. That means you'll need access to something (a laptop, phone, tablet, etc.) that is wifi-enabled, so you can log in, answer questions, and get credit for the day. Note that attempting to answer questions from home is not permitted. That would be a violation of the honor code.

Attendence will periodically be taken in other forms, such as the submission of in class programming assignments, instead of Pytania. Any form of attendance taking will not be announced prior to class.

1.3 Discussion Board: Piazza

- Course schedule, announcements, lecture slides, assignments, discussion. GTA contacts and office hours will be on Piazza too.
- All correspondence will go through Piazza. You can send private messages to the instructors (visible to all professors and the GTA) 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 or visit in person. *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 projects**. You MUST read the discussion board for clarifications and project updates.

1.4 Blackboard

- Grades will be posted to Blackboard.
- Projects and most lab assignments will be submitted (per published deadlines) via Blackboard.

2 Grading

Category	Sub-Category	Percent	Notes
In-Class	Participation	2%	up to 1% extra credit for correctness
Homework	Zyante reading	3%	drop 2 lowest-completion **assignments** (*not* chapters)
	Individual Projects	40%	drop 1 lowest
Tests and Exams	Lab Quizzes & Tasks	15%	drop 2 lowest, average others evenly
	Midterm Exam	15%	midterm replacement (see section on 2.5 on Exams)
	Final exam	25%	must pass final to pass class class (see section on 2.5 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 Individual Projects

Programming projects will be a primary focus of your grade - each one should take multiple sessions of coding, with questions asked in between. 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. All project grades will be averaged together evenly.

- **Blackboard Submission**
  - All projects are to be submitted to Blackboard. You can submit your work an unlimited number of times to BlackBoard, 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 students' computers die, are stolen, or otherwise 'lose' projects. Don't be the student who forgot to (frequently) back up your work!

- **Deadlines and Emergency-Days**

  - Each project has a posted deadline.
  - The latest you can turn in work is 48 hours after the posted deadline, no exceptions.
  - The last project may not be turned in late, to facilitate end-of-semester grading.
  - Each 24-hour period entered after the deadline lowers the maximum score by **20%** (not quite the same as a 20% penalty: recorded_grade = min(raw_score, 100-(20*num_days_late))).
  - Each student gets **three** Emergency-Days, which are automatically used by late submissions. Each emergency-day allows you to avoid a single 24-hour period of penalties.
  - Even if you use emergency-days, you still must turn in work within 48 hours of the original deadline! (Note that this means you can't use three emergency-days on a single project)
  - Emergency-days are only allowed on projects; they can't be used on labs or group homeworks.
  - 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").
  - Unused emergency-days will be worth a small bounty at the semester's end (0.25% of the semester grade). This is a reward for working and planning ahead during the semester.

- **Broken Code == Bad Scores**

  - After the first two projects, any code turned in that does not run (immediately crashes due to errors), specifically on Python 3.7, will

receive at most 50%. No exceptions. At this point, if the grader is able to quickly fix your code, you might get some points back. If the grader cannot immediately spot and fix the issue, you'll be fortunate to get any points at all.
    - Turning in code that runs is a big deal!

- **Honor Code: Special Notes for Projects**
    - Programming projects are considered individual efforts, therefore no sharing of code and/or discussion of problem solutions are allowed with anyone except the TAs or the professor. Student projects will be manually and automatically assessed for cheating. **You may not look at or otherwise view 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 your encounter online, to gain an understanding of what the syntax error means. The projects 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 will be liable for any access gained to your code.
    - See Honor code section below for more details.

2.2 Labs

- All lab assessment grades will be averaged together. Lab assessments will be weekly quizzes or in-lab tasks, to be completed during lab.
- Lab quizzes and tasks require attendance at your *designated* lab time to get the credit.
- Any missed lab assessment is simply missed, regardless of the reason why (travel, illness, work, traffic, receiving a major award, getting married, saving the universe, etc.). Two lowest lab grades will be dropped to cover the very rare cases of understandable missed labs.
- If you choose to miss some early on, and later on have to miss for some understandable reason, that is too bad. Try to save the drops so you can actually throw out a bad grade, and not just hide a lazy zero. Pretending you don't have them is your best approach.

2.3 Zyante (Zybook) Readings

- Zyante readings are graded based on the completion percentage of activities **before the designated deadline** of each chapter.
- See the schedule page on Piazza for reading assignment due date.
- Make sure you're logged in to get credit for reading completion.
- Optional subsections are not considered for Zyante grading.

2.5 Exams

- Exams are closed book/notes unless specified otherwise by instructor. They will be entirely paper and pencil - no computers.
- All students must have their GMU identification available on testing days.
- The final exam is cumulative. If you perform better on the final exam than your midterm exam, we will replace the midterm grade with the final grade.
- If you know in advance that you are unable to make an exam 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, and bring documentation with you when you take the make-up.
- If you miss an exam 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, and bring approved documentation with you when you take the make-up exam. Failure to follow either of these policies will result in a zero.
- The final will not be given early. You are starting the course with knowledge of the schedule (see GMU's Final Exam Calendar for the latest schedule, updated as weather events require).
- 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 >=65%. This average score is calculated as a **weighted** average of your exam scores (((15*Labs) + (15*Midterm) + (25*Final))/55). Note that midterm grades will not be "replaced" with the final grade for this calculation. In short, in 99/100 cases, **you must pass the final exam to pass the course**.

2.6 Contested Grades

If you feel points have been incorrectly deducted, contact the grader. For all homework, projects, and lab work, that is your GTA. For exams, that is your professor. Contesting of grades on any/all submissions must be requested

within three days of receiving the grade (on BlackBoard). No grade changes will be considered subsequent to that deadline.

3 Office Hours and Discussion Board

There is substantial support available to you outside of lecture time in the form of office hours and and the online discussion board (Piazza). If you are having difficulty on a project or lab, we encourage you to reach out **as early as possible**. That said, to ensure fairness and facilitate learning, we have some basic rules for seaking help outlined below.

Please note that the is a discussion forum for you, the students, to discuss the course and the course material. It is monitored regularly by the GTA and your professor, but this is NOT a replacement for office hours, lecture with your professor, or labs.

3.1 Rules for Office Hours

- For students seeking help with programming assignments during office hours, students must identify the line number, through debug print statements, where they believe an error to be before seeing the TA or instructor. This implies that you must have at least one test case that fails, to bring to office hours before the TAs or instructor can help you.
- For more general programming 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 more than three lines of code at a time during office hours. Students must make significant, individual effort on all projects before coming to see a GTA/professor. Waiting until the last minute, in the expectations that the entire project 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 project/lab and you and the TA cannot find a 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).
- Your time in professor office hours will be limited depending on amount of people who are seeking help. You may be asked to leave and come back later so that everyone can have a chance to ask a question. **Office hours are not a place to camp out and work on your assignments**, you must bring specific questions or know specifically what you are having trouble with.

- Students often forget that office hours are also a time to get clarification on concepts we have covered in class, so don't forget that you can ask more questions than just "my project doesn't work and I think the problem is on line X, am I right?". We are happy to answer conceptual questions.

3.1 Rules for the Discussion Board

- 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.
- There are no UTAs assigned to CS112 this summer. Therefore, responses to questions can be expected **within 36 hours**, though often times 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.).
- If you have any questions about what you are/aren't permitted to do on a project/exam and you/others cannot find a 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 sorts 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 actually 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 projects 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 project 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 penalty for cheating will always be far worse than a zero grade, to ensure it's not worth taking the chance. Confirmed cases of cheating almost always translate into course failure.
- Please read Understanding the Honor Code - Dr. Snyder's thoughts about the purpose of the honor code in a computer science course.
- There are definitely opportunities to study, work, and learn together throughout this course - Zyante questions, lab exercises, and more. Mostly you will need to work independently for any sort of "test" and for projects.

5 The Office of Disability Services

Students with a learning disability or other condition (documented with GMU's Office of Disability Services) that may impact academic performance should speak with the professor ASAP to discuss appropriate accommodations. Even if you don't know whether you plan on utilizing the accommodations for any assignment/test, it's in your best interest to prepare and get documented ahead of time.