CMSC125- Introduction to Computing

Course Information

Course Title: Introduction to Computing
Course Number: 125
Term: Summer 23
Credits: 3

Instructor: Elias Gonzalez
Pronouns: He/Him
Office: Iribe 1252 (2nd floor)
Email: egonzal5@umd.edu
Office Hours: Tu/Th 1pm-3pm
Classroom: TWS 1310

TA: Aditya Rangarajan
Office Hours:

- **Online: 4pm-5pm**
- **In Person: 12pm-2pm in Tawes**

Course Description

This course introduces you to the computing field as a whole. You will gain skills used across the spectrum of computing majors and learn about the great variety of routes into the various areas of study and employment in technological fields.

Course Objectives

After successfully completing this course you will be able to:

- Apply computational thinking skills to master basic programming skills in a general purpose coding language including conceptualizing the problem, designing a solution, implementing using basic language constructs, documenting that implementation, testing that implementation, refining that implementation and assessing the quality of the solution.
- Explain limitations algorithmic problem solving including time and space constraints when using a computer to solve a problem
- Apply mathematical formulas to help motivate mathematical problem solving through true applications
- Understand how these programming skills apply to the various areas of computing including creative arts, information/data, security and community concerns.
- Understand computing careers and the various pathways to those careers by reviewing scholarly resources around the applications of computing in all facets.
- Explain how programming is situated in and reflects broader social and organizational structures, and the ethical, equity and diversity issues this entails through discussion of case studies and developing and presenting creative solutions.

Required Resources

- Co-requisite: Math 115 (Precalculus)
- Other Restrictions: This course is not available for those who already have credit for or are currently registered for CMSC131, INST126 or IMDM127.

Required Resources

- Course Website: elms.umd.edu

Course Structure

The course is a 3 credit course where you will use presentations and research to explore the applications of computing in the world, the various computing majors on campus, and where these interests can be applied after graduation. In other assignments in this course, you will learn about the Python programming language to gain insight into the various aspects and concepts of computer programming - skills that can later be applied to other programming languages.

Tips for Success in This Course

1. **Participate.** Discussions and group work are a critical part of the course. You can learn a great deal from discussing ideas and perspectives with your peers and professor. Participation can also help you articulate your thoughts and develop critical thinking skills.
2. **Manage your time.** Make time for your online learning and participation in discussions each week. Give yourself plenty of time to complete assignments including extra time to handle any technology related problems.
3. **Login regularly.** Log in to ELMS-Canvas several times a week to view announcements, modules, discussion posts and replies to your posts.
4. **Do not fall behind.** This class moves at a quick pace and each week builds on the previous. It will be hard to keep up with the course content if you fall behind in the pre-work or post-work.
5. **Use ELMS-Canvas notification settings.** ELMS-Canvas can ensure you receive timely notifications in your email or via text. Be sure to enable announcements to be sent instantly or daily.
6. **Ask for help if needed.** If you need help with ELMS-Canvas or other technology, contact IT Support. If you are struggling with a course concept, reach out to me, and your classmates, for support.

Campus Policies

It is our shared responsibility to know and abide by the University of Maryland's policies that relate to all courses, which include topics like:

- Academic integrity
- Student and instructor conduct
- Accessibility and accommodations
- Attendance and excused absences
- Grades and appeals
- Copyright and intellectual property

Please visit www.ugst.umd.edu/courserelatedpolicies.html for the Office of Undergraduate Studies' full list of campus-wide policies and follow up with me if you have questions.

Course-Specific Policies

Names/Pronouns and Self-Identifications

The University of Maryland recognizes the importance of a diverse student body, and we are committed to fostering inclusive and equitable classroom environments. I invite you, if you wish, to tell us how you want to be referred to both in terms of your name and your pronouns (he/him, she/her, they/them, etc.). The pronouns someone indicates are not necessarily indicative of their gender identity. Visit trans.umd.edu to learn more.

Additionally, how you identify in terms of your gender, race, class, sexuality, religion, and dis/ability, among all aspects of your identity, is your choice whether to disclose (e.g., should it come up in classroom conversation about our experiences and perspectives) and should be self-identified, not presumed or imposed. We will do our best to address and refer to all students accordingly, and we ask you to do the same for all of your fellow Terps.

Piazza

This term we will be using Piazza for class discussion. The system is highly catered to getting you help fast and efficiently from classmates, the TA, and myself. Rather than emailing questions to the teaching staff, I encourage you to post your questions on Piazza. If you have any problems or feedback for the developers, email team@piazza.com.

Find our class signup link at: https://piazza.com/umd/summer2023/1c28e

Communication with Instructor:

ELMS: The instructor will send IMPORTANT announcements via ELMS **Announcements and/or Piazza**. You must make sure that your email & announcement notifications (including changes in assignments and/or due dates) are enabled in ELMS so you do not miss any messages. You are responsible for checking your email and Canvas/ELMS inbox with regular frequency.

Email:The instructor will be available by email. **Any questions should be asked via email! Email will typically be responded to within 48 hours.**

Office Hours: The instructor encourages you to attend office hours as soon as you are feeling you don't understand something. This course is by nature very comprehensive, meaning that if you are confused about something during one week, it will make it more difficult to understand the next week's material.

Communication with Peers:

With a diversity of perspectives and experience, we may find ourselves in disagreement and/or debate with one another. As such, it is important that we agree to conduct ourselves in a professional manner and that we work together to foster and preserve a virtual classroom environment in which we can respectfully discuss and deliberate controversial questions.

We encourage you to confidently exercise your right to free speech—bearing in mind, of course, that you will be expected to craft and defend arguments that support your position and maintain an open mind about points of

disagreement. Keep in mind, that free speech has its limit and this course is NOT the space for hate speech, harassment, and derogatory language. We will make every reasonable attempt to create an atmosphere in which each student feels comfortable voicing their argument without fear of being personally attacked, mocked, demeaned, or devalued.

Any behavior (including harassment, sexual harassment, and racially and/or culturally or identity-based derogatory language) that threatens this atmosphere will not be tolerated. Please alert me immediately if you feel threatened, dismissed, or silenced at any point during our semester together and/or if your engagement in discussion has been in some way hindered by the learning environment.

Major Assignments

Programming Assignments

- Each week there will be small programming assignments to help you get comfortable with the programming language. These assignments are stand-alone in that the code from the previous week will not be used in the following week's assignment, but the concepts will build from one week to the next. These assignments will be graded both on if they work and on the readability of the code submitted. Most of these assignments will be done individually, but small group work is possible. These coding assignments are in addition to the deliverables mentioned in the schedule below.

Research Projects

- Every few weeks you will have a small research assignment focusing on certain pertinent and complex issues within the computing fields. These projects are meant to serve as mini-projects to preview the contents of the final semester project.

Journaling about majors and career paths

- There will be several journaling assignments throughout the semester - each will have a specific prompt. The goal of the sequence of assignments will be to encourage you to think about the benefits and drawbacks of the different computing paths available to you. It will help to make sure you are processing this information on a personal level.

Quizzes

- There will be weekly quizzes. The quizzes will be short given on-line and assigned at the end of the week. All quizzes will be individual exercises and the questions and answers are not to be shared with your classmates or others.

Semester Project and Showcase

- There will be an individual project with a required showcase where students will complete a real design project. Students will be identifying a problem, ideating for solutions and implementing them.
- Students will get real world experience on how big projects are tackled and

Exams

- There will be a final exam in this course. The exams will cover both the programming aspect and the social/professional aspect of the course. The exams will be individual exercises. **Final Exam is on Friday, Jul 28, 2023**

Grading Structure

Assignment	Percentage %
Programming Assignments	**20%**
Research Assignments • **DEI Research Assignment** • **Privacy Research Assignment** • **Algorithms and Bias Research Assignment** • **Computing Majors Exploration**	**12%**
Quizzes	**13%**
Semester Project & Presentations	**30%**
Journals and Reflections	**10%**
Exam(s)	**15%**
Total	**100%**

Academic Integrity

The University's **Code of Academic Integrity** is designed to ensure that the principles of academic honesty and integrity are upheld. In accordance with this code, the program does not tolerate academic dishonesty. Please ensure that you fully understand this code and its implications because all acts of academic dishonesty will be dealt with in accordance with the provisions of this code. All students are expected to adhere to this Code. It is your responsibility to read it and know what it says, so you can start your professional life on the right path. **As future professionals, your commitment to high ethical standards and honesty begins with your time at the University of Maryland.**

It is important to note that course assistance websites, such as CourseHero, are not permitted sources, unless the instructor explicitly gives permission for you to use one of these sites. Material taken or copied from these sites can be deemed unauthorized material and a violation of academic integrity. These sites offer information that might not be accurate and that shortcut the learning process, particularly the critical thinking steps necessary for college-level assignments.

Additionally, it is understandable that students may use a variety of online or virtual forums for course-wide discussion (e.g., GroupME or WeChat). Collaboration in this way regarding concepts discussed in this course is permissible. However, collaboration on graded assignments is strictly prohibited unless otherwise stated. Examples of prohibited collaboration include: asking classmates for answers on quizzes or exams, asking for access codes to clicker polls, etc.

Please visit the **Office of Undergraduate Studies' full list of campus-wide policies** and follow up with me if you have questions.

If you ever feel pressured to comply with someone else's academic integrity violation, please reach out to me straight away. Also, ***if you are ever unclear*** about acceptable levels of collaboration, ***please ask***!

Grades

Campus Policy dictates that you must specify:

- How final letter grades will be determined. This should include a breakdown of all graded assessments, their weight in the course, and whether final grades will include +/- descriptors.
- How students will have access to their grades throughout the semester, and how they can review their work (including the final exam).

All assessment scores will be posted on the course ELMS page. If you would like to review any of your grades (including the exams), or have questions about how something was scored, please email me to schedule a time for us to meet and discuss.

Late work will be accepted for course credit up to 3 days late for a 5% penalty . **If you have extenuating circumstances getting in the way of turning in work please email me as soon as possible to talk about any extensions.** I am happy to discuss any of your grades with you, and if I have made a mistake I will immediately correct it. Any formal grade disputes must be submitted in writing and within one week of receiving the grade. Final letter grades are assigned based on the percentage of total assessment points earned. To be fair to everyone I have to establish clear standards and apply them consistently, so please understand that being close to a cutoff is not the same as making the cut (89.99 ≠ 90.00). It would be unethical to make exceptions for some and not others.

A table of the assessments and point values can be a concise way to convey all of the graded elements and their relative weight in the course. If you are using weighted percentages (e.g., exams = 30%, paper = 20%) be sure to clarify the number of assessments within each category… is there one exam worth 30% or are there three exams that are each worth 10.

Final Grade Cutoffs									
+	97.00%	+	87.00%	+	77.00%	+	67.00%	+	
A	94.00%	B	84.00%	C	74.00%	D	64.00%	F	<60.0%
-	90.00%	-	80.00%	-	70.00%	-	60.00%	-	

Course Outline

The format of this section will vary based on the design of your course and the semester, but our guidance is to aim for a clear and concise table that maps out all of the assignment assessments and deadlines and gives students a sense of the course's organization.

Week #	Topics for 2 lectures that week
1	Introduction to computing; Intro to Human Computer Interaction and Thunkable

	Basic App Coding, Problem Generation
	Introduction to Programming, Python Introduction
	Variables, declarations and data types, Paper Prototyping
	Conditionals and decisions, Computing Majors Exploration
2	**Repetition and Looping; Semester Project Prototyping Check In**
	Python and data storage and problem solving; impacts of data
	Errors in Coding - testing and debugging, Midterm Exam
	Modularity and Functions; Impacts of modularity, Project Re-evaluation
	Algorithms; Limitations of and Bias in Algorithms, Project Peer Evaluation
3	**Resume and Cover Letter Workshop, 4 year plans, Ethics**
	Privacy and the Internet, Cryptocurrencies
	Beyond Computing at UMD, What's Next?
	Presentations of Projects

Note: This is a tentative schedule, and subject to change as necessary – monitor the course ELMS page for current deadlines. In the unlikely event of a prolonged university closing, or an extended absence from the university, adjustments to the course schedule, deadlines, and assignments will be made based on the duration of the closing and the specific dates missed.

Resources & Accommodations

Accessibility and Disability Services

The University of Maryland is committed to creating and maintaining a welcoming and inclusive educational, working, and living environment for people of all abilities. The University of Maryland is also committed to the principle that no qualified individual with a disability shall, on the basis of disability, be excluded from participation in or be denied the benefits of the services, programs, or activities of the University, or be subjected to discrimination. The **Accessibility & Disability Service (ADS)** provides reasonable accommodations to qualified individuals to provide equal access to services, programs and activities. ADS cannot assist retroactively, so it is generally best to request accommodations several weeks before the semester begins or as soon as a disability becomes known. Any student who needs accommodations should contact me as soon as possible so that I have sufficient time to make arrangements.

For assistance in obtaining an accommodation, contact Accessibility and Disability Service at 301-314-7682, or email them at **adsfrontdesk@umd.edu**. Information about **sharing your accommodations with instructors**, **note taking assistance** and more is available from the **Counseling Center**.

Student Resources and Services

Taking personal responsibility for your own learning means acknowledging when your performance does not match your goals and doing something about it. I hope you will come talk to me so that I can help you find the right

approach to success in this course, and I encourage you to visit **UMD's Student Academic Support Services website** to learn more about the wide range of campus resources available to you.

In particular, everyone can use some help sharpen their communication skills (and improving their grade) by visiting **UMD's Writing Center** and schedule an appointment with the campus Writing Center.

You should also know there are a wide range of resources to support you with whatever you might need (**UMD's Student Resources and Services website** may help). If you feel it would be helpful to have someone to talk to, visit **UMD's Counseling Center** or **one of the many other mental health resources on campus**.

Basic Needs Security

If you have difficulty affording groceries or accessing sufficient food to eat every day, or lack a safe and stable place to live, please visit **UMD's Division of Student Affairs website** for information about resources the campus offers you and let me know if I can help in any way.

Technology Policy

Please refrain from using cellphones, laptops, and other electronic devices during class sessions unless we have designated such use as part of a class exercise.

Netiquette Policy

Netiquette is the social code of online classes. Students share a responsibility for the course's learning environment. Creating a cohesive online learning community requires learners to support and assist each other. To craft an open and interactive online learning environment, communication has to be conducted in a professional and courteous manner at all times, guided by common sense, collegiality and basic rules of etiquette.

Participation

- Given the interactive style of this class, attendance will be crucial to note-taking and thus your performance in this class. Attendance is particularly important also because class discussion will be a critical component for your learning.
- Each student is expected to make substantive contributions to the learning experience, and attendance is expected for every session.
- Students with a legitimate reason to miss a live session should communicate in advance with the instructor, except in the case of an emergency.
- Students who miss a live session are responsible for learning what they miss from that session.
- Additionally, students must complete all readings and assignments in a timely manner in order to fully participate in class.

Course Evaluation

Please submit a course evaluation through CourseEvalUM in order to help faculty and administrators improve teaching and learning at Maryland. All information submitted to CourseEvalUM is confidential. Campus will notify you when CourseEvalUM is open for you to complete your evaluations for fall semester courses. Please go directly to the **Course Eval UM website** to complete your evaluations. By completing all of your evaluations each semester, you will have the privilege of accessing through Testudo, the evaluation reports for the thousands of courses for which 70% or more students submitted their evaluations.

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