CDS 230

Fall 2022

Version 1

1. Vitals

Instructor: Jason M. Kinser, D.Sc. and Sharmin Abdullah Ph.D.

Office: Research Hall, Room 230 (sometimes)

Office Hours: TBD

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Phone: Campus phone 703 993 3785

Meeting Time and Location: MW 10:30-11:45 Online Synchronous.

2. Introduction

2.1. Purpose of Course

An introduction to *Modeling and Simulation*. Students will use Python to create models and simulations.

Students are not required to know Python before the class begins. However, experience in a sequential programming language (C, C++, Java, etc.) will be useful.

Students will be expected to have a good working knowledge of algebra, trigonometry, and algebra. Calculus is not required.

2.2. Computers

Students will program in this class.

Access to a computer that can run Python/Anaconda/Jupyter is required. PCs, MACs and LINUX are more than sufficient. Chromebooks will probably cause problems and are not recommended for this course.

It is recommended that students use their own computers, as using shared resources can be troublesome. Students who do not have access to a personal computer can ask the instructor for possible resources.

2.3. Online Course

This course is ONLINE and SYNCHRONOUS.

This means that the lectures will be live-streamed and not recorded. Just as with an on-campus course, students are expected to attend class.

If a student needs an ASYNCHRONOUS course, then they should sign up for the asynchronous section of CDS 230.

This course will rely on Blackboard and Zoom as the interface. Students will be required to receive live-stream courses during course time. They will also be expected to interact with the course. Thus, a camera and microphone will be required.

RULES:

- Mute when not speaking – PLEASE. This reduces feedback and accidental noises
- Interact. An online class does NOT mean that you can turn off the camera and veg out.
- You will be called on to respond to questions and discussions.
- Keep the Camera on. A blank screen is an invitation for the instructor to ask questions.

2.4. Course Objectives

By the end of the course, students should have:

- An understanding of Python Programming
- An understanding of converting problems into simulations and models.

3. Grading

Home work	500
Exam #1	150
Exam #2	150
Final	200
TOTAL	1000

The letter grade is based on:

A+	>967
A	933-966
A-	900-932
B+	867-899

B	833-866
B-	800-832
C+	767-799
C	733-766
C-	700-732
D	600-699
F	<600

If you have issues about attending these exams then you need to see me **before** the exam. If you have an emergency at the time of the exam then you will need to see me as soon as possible.

There will be NO GROUP work in the exams. You are on your own so that we can see how excellent you can be.

4. Homework

Homework is 50% of the course grade (set at 500 points). If the total points for the assignments exceeds 500 points, then lowest grades can be discarded. This occurs only if there are more than enough points assigned.

There is no (none, nada, noway) extra credit assignments.

Be **warned**, the assignments are due just **before** class starts a week after they are assigned. Blackboard will close the portal and after that you can not submit the assignment.

Homeworks will be turned in through Blackboard. Do not email the homework.

Every assignment should allow multiple submissions, but only the last submission will be graded. Be sure to include all documents in every submission.

5. How to Fail this Class

How can you fail this class? In a word – quit. Students that work hard and ask for help when the going gets rough rarely fail a class. Most commonly the “F”s are awarded to students that fail to do their work and give up on the course material.

So, if you are not pleased with the grades that you are earning or find the material to be difficult then please ask a lot of questions, come to office hours and post questions on Piazza. I will be delighted to offer ample assistance so that you can earn a respectable grade.

6. Tentative Outline

This schedule may change due to class cancellations (snow days, power outages, etc.). This schedule may be changed based on the class performance.

No.	Date	Topic
1	01/24/22	Intro
2	01/26/22	Python Basics
3	01/31/22	Collections
4	02/02/22	Logic and Control
5	02/07/22	Linked List
6	02/09/22	Functions
7	02/14/22	Numpy
8	02/16/22	Matplotlib
9	02/21/22	Random Numbers
10	02/23/22	Simulate Card Game
11	02/28/22	EXAM
12	03/02/22	Schelling
13	03/07/22	Database Intro
14	03/09/22	movies
15	03/14/22	SPRING BREAK
16	03/16/22	SPRING BREAK
17	03/21/22	Pandas 1
18	03/23/22	Pandas 2
19	03/28/22	Strings
20	03/30/22	Monte Carlo
21	04/04/22	EXAM
22	04/06/22	HMM
23	04/11/22	Baseball
24	04/13/22	Creating Data
25	04/18/22	Kinematics
26	04/20/22	Spring 1
27	04/25/22	Not Calculus
28	04/27/22	Coupled
29	05/02/22	Spring 2
30	05/04/22	Prep
	05/11/22	FINAL 10:30-1:15

7. Inclement Weather

The Mason policy for snow days has been updated. If Mason is closed due to weather, then on-campus courses are canceled. Online courses are **not** canceled.

We are an online course. Therefore, campus closures will not affect our schedule.

8. Assistance and Legalities

Below are just of few support services available to students. The full list is at: https://stearnscenter.gmu.edu/knowledge-center/knowing-mason-students/student-support-resources-on-campus

8.1. IT Support

If you are having difficulties with your Mason network account, or with software on the Mason network , please contact IT support: support@gmu.edu . Or pay them a visit in Innovation Hall: ITS Support Center, Innovation Hall, Room 226. You can also call them: 703-993-8870.

8.2. Academic Integrity

It is expected that students adhere to the George Mason University Honor Code as it relates to integrity regarding coursework and grades.

The Honor Code reads as follows: ``To promote a stronger sense of mutual responsibility, respect, trust, and fairness among all members of the George Mason University community and with the desire for greater academic and personal achievement, we, the student members of the University Community have set forth this: Student members of the George Mason University community pledge not to cheat, plagiarize, steal and/or lie in matters related to academic work." More information about the Honor Code, including definitions of cheating, lying, and plagiarism, can be found at the Office of Academic Integrity website at http://oai.gmu.edu/honor-code/ .

8.3. Accommodations

If you are a student with a disability and you need academic accommodations, please contact Disability Services (DS) at 703-993-2474. All academic accommodations must be arranged through DS.

8.4. Digital Communcation

Privacy is important for faculty and student communications. Students are required to use their Mason email when communicating their instructors. Instructors, being employees of the State of Virginia, are required to use their Mason email when communicating with students.

8.5. Freedom

This course will encourage students to respectfully present their thoughts. At Mason, we have a wonderful diversity of students providing a rich resource of education, thoughts, and growth. Through this unique Mason community, we can learn more about ourselves and our world then we could in almost every other university.

https://www2.gmu.edu/1stAmendment

8.6. Respect for Diversity

Mason is a great example of a diverse society, where students and faculty can embrace the knowledge and relationships gained from being in an academic environment with people from a large variety of countries, backgrounds, experiences, heritages, and so on. All students are expected to respect people within this diverse population, and they could greatly benefit from its riches by immersing in the Mason experience. Disrespect will not be tolerated in this class.

8.7. Title IX

Notice of Mandatory Reporting of Sexual Assault, Interpersonal Violence and Stalking: As a faculty member, I am designated as a ``Responsible Employee,'' and must 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 one of Mason's confidential resources, such as the Student Support and Advocacy Center (SSAC) at 703-380-1434 or Counseling and Psychology Services (CAPS) at 703-993-2380. You may also seek assistance from Mason's Title IX Coordinator by calling 703-993-8730 or emailing cde@gmu.edu

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