DEPARTMENT OF MATHEMATICAL AND COMPUTATIONAL SCIENCES UNIVERSITY OF TORONTO MISSISSAUGA

CSC108H5S LEC9101 Introduction to Computer Programming Course Outline - Winter 2022

Class Location & Time Mon, 11:00 AM - 12:00 PM

Wed, 11:00 AM - 12:00 PM Fri, 11:00 AM - 12:00 PM

Instructor Daniel Zingaro

Office Location virtual

Office Hours Fri 2:00PM-4:00PM daniel.zingaro@utoronto.ca

Course Web Site https://mcs.utm.utoronto.ca/~zingarod/108

Course Description

Structure of computers; the computing environment. Programming in a language such as Python. Program structure: elementary data types, statements, control flow, functions, classes, objects, methods, fields. List: searching, sorting and complexity. [36L, 24P]

Prerequisite: Grade 12 Advanced Functions (MHF4U).

Exclusion: CSC108H1 or CSC120H1 or CSC148H5 or CSC148H1 or CSC150H1 or CSCA08H3 or CSCA20H3 (SCI)

Distribution Requirement: SCI

Students who lack a pre/co-requisite can be removed at any time unless they have received an explicit waiver from the department. The waiver form can be downloaded from here.

Detailed Course Description

Welcome to CSC108H5S, an Introduction to Computer Programming! By the end of this course, you should be comfortable with procedural programming in Python and will have been exposed to software development topics like testing, design, and documentation. You will also be exposed to some core computer science ideas, such as complexity, abstraction, and the use of algorithms.

Successful students from past terms agree that the keys to this course are: (1) frequent practice; and (2) being active in the community. First, read or write Python code every day - if only for a few minutes - rather than cramming the labs and assignments into full-day sessions. This will make lectures easier to understand, will give you plenty of time to ask questions, and utilizes spaced repetition, which has been shown to improve learning. Second, make friends with your peers in lecture and labs. You will see the people in this class also taking MAT102, calculus, and in later computer science courses (e.g., CSC148). Communicate with each other on the discussion board, form study groups, and look for departmental seminars and social events to get engaged early.

Some of the topics covered in this course are:

- Python Arithmetic, Logic and Booleans
- Strings, Indexes, Formatting
- Conditionals, Loops
- Data Structures (Lists, Tuples, Sets, Dictionaries)
- Functions, Scoping, Program Design
- File I/O (Reading, Parsing, Writing)
- Testing (Doctests and Unit Tests)
- Introduction to Algorithms, Complete Search
- Introduction to Timing, Big O Complexity, Sorting
- Introduction to OOP (Structures, Methods, Magic Methods, Design)
- Regular Expressions and Other Topics (time permitting)

Textbooks and Other Materials

<u>Textbook</u>: The required course textbook is my book "Learn to Code by Solving Problems: A Python Programming Primer" (ISBN: 978-1718501324). The course website is also required reading. You might also like to check out <u>Python's Documentation</u>, which includes <u>Tutorials</u>.

This course requires regular access to a computer*. The software required for this course has been installed in the computer science labs (DH2010/2020/2026). Due to the online nature of this semester, if you wish to install the software on a personal machine, please follow the links to the required software and packages on the course website. Software includes: Python 3.9, an IDE** (i.e., Python packages (see course website), and Google Chrome as your browser. The first Lab (i.e., Lab 1) will go through the installation process, should you need help.

*Please see the <u>recommended and minimum technology requirements for remote/online learning from the Office of the Vice Provost.</u>

**This course will only support the use of PyCharm Community Edition. Videos have been posted to demonstrate how to install Python 3.9 and PyCharm Community Edition on Windows and macOS. No additional support is available from course staff.

Assessment and Deadlines

Type	Description	Due Date	Weight
Quiz	Pre-week reading quizzes	On-going	6%
Assignment	Assignment 1	2022-01-31	8%
Assignment	Assignment 2	2022-02-14	12%
Assignment	Assignment 3	2022-03-07	12%
Term Test	Midterm Test	2022-03-18	15%
Assignment	Assignment 4	2022-03-28	12%
Final Exam	Minimum of 40% on final exam required to pass the course	TBA	35%
		Tota	ıl 100%

More Details for Assessment and Deadlines

Lectures will take place on Zoom. Please log on from a quiet, distraction-free environment. Be sure to use your U of T Zoom account by logging out of any personal account and instead logging in through utoronto.zoom.us. During lecture portions, please ensure that your microphone is muted. You may post in the public chat for other students to answer; at various points your instructor will try to respond to chat questions as well. For any small-group activities, we will use breakout rooms in the Zoom meeting, during which we hope you'll share your voice and face.

ALL COURSE ASSESSMENTS (reading quizzes, assignments, midterm test, exam) <u>MUST</u> BE COMPLETED INDIVIDUALLY. THE WORK YOU ARE SUBMITTING SHOULD BE YOURS AND YOURS ALONE.

NOTE: ALL DEADLINES ARE IN EASTERN TIME (ET); i.e., TORONTO/MISSISSAUGA TIME.

Weekly Reading Quizzes

Research consistently shows us that students remember only a small fraction of what is presented in lecture. It is not easy to make sense of material that you see for the first time in a fast-paced lecture environment, let alone to stay focused for 50 minutes. It's also important to space out your studying (spaced repetition).

To prime you for what we will discuss, you will read relevant material from the textbook and complete a reading quiz by Monday morning before lecture. The work is graded on completion (not correctness) and is due by 10:00AM on Monday. The point is not that you get all of the questions right, but that you read the required material and emerge with an understanding of what you do and do not know. You can miss one reading quiz with no penalty. Use these reading quizzes as formative feedback: if you are struggling to answer the questions, go to the lab, ask questions in lecture, or visit office hours to get help early, before you are stuck.

Note: grades for reading quizzes will not be posted throughout the semester. Grades will be released towards the end of the course.

Labs

The practical lab time is an opportunity for you to study new practice problems supported by TAs and, time permitting, to get other assistance on course material and assignments. You may attend any lab practical that you choose. However, if the lab is filled to capacity, the TAs will ask students not enrolled in the practical running at that time to leave in favor of students who are enrolled.

Labs commence the week of Monday January 17.

Some Lab Tips:

- 1. Your TAs are there to help! Don't be afraid to ask them questions about the lab that's why they are there.
- 2. If you happen to finish the regular lab tasks early, feel free to work on additional problems or help others who may be struggling (thank you in advance!).

Test & Final Exam

This course will have one midterm test and one final exam, both completed online using MarkUs. The midterm will be available for 36 hours and you can take as much of that time as you need; the exam will take place strictly in a 2 hour time session. Additional details will be distributed in lecture and on the discussion board.

YOU MUST OBTAIN A MINIMUM OF 40% ON THE FINAL EXAM TO PASS THE COURSE; otherwise your final mark will be set no higher than 47%.

Note:

All assessments are subject to plagiarism similarity software and instructional team questioning/interviews.

All dates and times reflect the time zone in which the University of Toronto Mississauga is in.

Re-Grade/Re-Mark Requests:

All re-grade/re-mark requests must be done within 7 calendar days of receiving the grade/mark. All work will be re-evaluated and can cause the grade/mark to go up, go down, or stay the same. Additionally, the work will be evaluated in its entirety (i.e., it will be a full review of the submission).

Penalties for Lateness

Reading quizzes are not accepted late. For assignments, ideally you will finish by the deadline, but I do understand that sometimes a late submission cannot be avoided. For that reason, there is no penalty for submitting within one hour late. After that hour, there is a 5% penalty for every 6 additional hours late, to a maximum of 24 hours (where the penalty would be a total of 20%). A submission that is more than 25 hours past the due date will not be accepted.

Procedures and Rules

Missed Term Work

In order to receive special consideration, you must email the course coordinator and declare your absence on ACORN. For more information, visit the Office of the Registrar website (https://www.utm.utoronto.ca/registrar/utm-absence).

In order to receive special consideration, you must email supporting documentation to me and you must declare your absence on Acorn.

If you are unable to complete an assessment or if you miss a test due to major illness or other circumstances completely outside of your control, please contact me immediately. It is always easier to make alternate arrangements before a due date, so please inform me as soon as you know that you will need accommodation.

Exact accommodations will be determined **on a case-by-case basis and will <u>not</u> be given automatically**. In other words, you risk getting a mark of zero (i.e., a grade of 0) for missed work unless you contact me promptly.

Missed Final Exam

Students who cannot complete their final examination due to illness or other serious causes must file an <u>online petition</u> within 72 hours of the missed examination. Late petitions will NOT be considered. Students must also record their absence on ACORN on the day of the missed exam or by the day after at the latest. Upon approval of a deferred exam request, a non-refundable fee of \$70 is required for each examination approved.

Academic Integrity

Academic integrity is essential to the pursuit of learning and scholarship in a university, and to ensuring that a degree from the University of Toronto Mississauga is a strong signal of each student's individual academic achievement. As a result, UTM treats cases of cheating and plagiarism very seriously. The University of Toronto's <u>Code of Behaviour on Academic Matters</u> outlines behaviours that constitute academic dishonesty and the process for addressing academic offences. Potential offences include, but are not limited to:

In papers and assignments:

- 1. Using someone else's ideas or words without appropriate acknowledgement.
- 2. Submitting your own work in more than one course, or more than once in the same course, without the permission of the instructor.
- 3. Making up sources or facts.
- 4. Obtaining or providing unauthorized assistance on any assignment.

On tests and exams:

- 1. Using or possessing unauthorized aids.
- 2. Looking at someone else's answers during an exam or test.
- 3. Misrepresenting your identity.

In academic work:

- 1. Falsifying institutional documents or grades.
- 2. Falsifying or altering any documentation required, including (but not limited to) doctor's notes.

Keep in mind that the department uses software that compares programs for evidence of similar code. Below are some tips to help you avoid committing an academic offence, like plagiarism.

- Never look at another student's lab/assignment solution(s). Never show another student your lab/assignment solution. This applies to all drafts of a solution and to incomplete and even incorrect solutions.
- Keep discussions with other students focused on concepts and examples. Never discuss labs/assignments before the due date with anyone but your Instructors and your TAs.
 - Do not discuss your solution publicly on the discussion board or publicly in the lab rooms/office hours.

All suspected cases of academic dishonesty will be investigated following procedures outlined in the Code of Behaviour on Academic Matters. If you have questions or concerns about what constitutes appropriate academic behaviour or appropriate research and citation methods, you are expected to seek out additional information on academic integrity from your instructor or from other institutional resources.

All of the work you submit must be done by you alone, and your work must not be submitted by someone else. Plagiarism is academic fraud and is taken very seriously. The department uses software that compares programs for evidence of similar code. Please read the Rules and Regulations from the UofT Calendar (especially the <u>Code of Behaviour on Academic Matters</u>).

Please don't cheat. It is unpleasant for everyone involved, including us. Here are some general guidelines to help you avoid plagiarism:

- Never look at another student's solution(s). Never show another student your solution. This applies to all drafts of a solution and to incomplete and even incorrect solutions.
- Keep discussions with other students focused on concepts and examples. Never discuss solutions before the due date with anyone but your Instructors and your TAs.
- Do not discuss your solution publicly on the discussion board or publicly in the lab rooms/office hours.

Plagiarism Software

A series of plagiarism detection tools will be used to detect the similarity of submissions in this course. All submitted work in this course is subject to this verification.

Plagiarism Detection

Normally, students will be required to submit their course essays to the University's plagiarism detection tool for a review of textual similarity and detection of possible plagiarism. In doing so, students will allow their essays to be included as source documents in the tool's reference database, where they will be used solely for the purpose of detecting plagiarism. The terms that apply to the University's use of this tool are described on the Centre for Teaching Support & Innovation web site (https://uoft.me/pdt-faq).

Students may wish to opt out of using the plagiarism detection tool. In order to opt out, contact your instructor by email no later than two (2) weeks after the start of classes. If you have opted out, then specific information on an alternative method to submit your assignment can be found below.

Final Exam Information

Duration: 2 hours

Aids Permitted: Open book (Textbook)

Additional Information

Communication & Discussion Board

The course announcements are made through the Piazza discussion board, this is required reading. We will post important updates and announcements on the board, so make sure to visit it often (i.e., multiple times per day). In addition, each of you can post questions (and answers!) so the discussion board will typically be the fastest way to get help with course material or an administrative question.

Please use the discussion board to ask general course-related questions. The board will be very busy, so to make it easier for everyone to find answers to their questions, please use good forum etiquette. Use informative titles for your posts, so that people can find relevant information. Read the posts already on the board before posting a question so that you don't post a duplicate. Finally, be professional in tone and behaviour.

Please DO NOT post solution code on the board. If you have a question about assigned code (i.e., code assigned for you to complete for credit), please generate new code to demonstrate your question, rather than posting the assigned code. Alternately, phrase your question without posting the code itself. You may **also post privately**, to **all instructors**, and a member of course staff can convert the post to a public one later if they deem it important to do so.

Due to the size of the course, email is reserved for personal issues, such as needing to report an illness or discussing an alternate test date. Due to volume, questions about course content should be directed to the discussion board and will be ignored if sent to email. Email must be sent from a UofT email address. Emails sent from a non-UofT address will not be replied to.

Creating a Positive Learning Environment

We are committed to creating a respectful learning environment in computer science courses for all students and expect that you will adhere to the University of Toronto Code of Student Conduct. Please be mindful of how your behaviour influences the atmosphere in our learning community, not just in classes, but also in labs, in online forums, and anywhere that you interact with other students and members of the department.

Specifically, we require all students to:

- 1. Be welcoming, friendly, and patient, especially with new members of the community.
- 2. *Be respectful in your speech and actions*. Refrain from demeaning, discriminatory, harassing, or threatening speech and actions. This includes personal insults, discriminatory jokes, threats (or acts) of violence, bullying, unwanted sexual attention, or other repeated harassment.
- 3. **Seek to resolve conflicts constructively.** Disagreements and conflict are inevitable but should be handled patiently and respectfully. Conflict can be a source of learning if you seek to understand the source of the disagreement, and it can strengthen the community if resolved collaboratively.

Last Date to drop course from Academic Record and GPA is March 13, 2022.