FOR THOSE CURRENTLY STUDYING CS 116: PLEASE REFER TO THE EDX COURSE SHELL FOR THE MOST UP-TO-DATE INFORMATION. THE INFORMATION PROVIDED ON EDX SUPERSEDES THIS DOCUMENT.

Fall 2021, CS116, Introduction to Computer Science 2

Class Schedule

CS116 – 001 – ONLN – Online
CS116 – 002 – ONLN – Online
CS116 – 003 – ONLN – Online

Instructor Information

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For instructor, instructional support assistant, and instructional apprentice office hours, please see the Office Hours page in our edX course shell.

For general administrative course questions, the instructional support assistants may be contacted by email at cs116@uwaterloo.ca.

For instances related to illness, emergencies, INCs, VIFs, etc please contact the Instructional Support Coordinator, Scott King, sfking@uwaterloo.ca.

Course Description

This course builds on the techniques and patterns learned in CS 115 while making the transition to use of an imperative language. Generative and structural recursion; mutation (assignment) and its role in an imperative language; primitive types and basic I/O; sequencing, selection, and looping; function definition and use; file and console I/O; and issues in computer science will all be examined.

Learning Outcomes

After completing this course, students will be able to:

- Given a clear and concise statement of a problem or task, write a program from scratch of up to a hundred lines of properly-formatted, tested, and documented Python code to solve the problem or carry out the task
- Use higher-order functions to improve the readability and efficiency of programs
- Use various forms of recursion (structural, accumulative, and generative) in programs
- Use various forms of iteration (for, while) in programs
- Describe the basic memory model for mutation of basic types, lists, and objects in Python
- Distinguish between constant, linear, quadratic, and exponential running times of algorithms
- Explain the relative advantages and disadvantages of lists and dictionaries
- Write useful Python programs using console and file input and output for practical tasks

Tentative Detailed Daily Course Schedule

In this section we give our recommendation for what to work on every day of the term (weekdays, excluding holidays and reading week). You are not required to adhere rigidly to this schedule; it's offered based on our expectation for how long it will take to complete the individual components of the course. We think setting aside roughly 2 hours a day for this course should make the following schedule feasible.

Date	Recommended Course content
September 8	Orient Yourself with the Course, Style Guide, Syllabus Sections, M1 Warm-Up Quiz, Read Assignment 1
September 9	Lesson 1.1, Lesson 1.2, Lesson 1.3

September 10	Lesson 1.4, Lesson 1.5
September 13	M1 Wrap-Up Quiz, Start Assignment 1
September 14	Continue Assignment 1
September 15	M2 Warm-Up Quiz, Lesson 2.1, Read Assignment 2
September 16	Lesson 2.2, Lesson 2.3
September 17	Lesson 2.4, M2 Wrap-Up Quiz, **Module 1 Quizzes and Concept Checks Due at 11:59pm ET**
September 20	Start Assignment 2
September 21	Continue Assignment 2

September 22	M3 Warm-Up Quiz, Lesson 3.1, **Assignment 1 Due at 10:00am ET**
September 23	Lesson 3.2, Lesson 3.3
September 24	Lesson 3.4, **Module 2 Quizzes and Concept Checks Due at 11:59pm ET**
September 27	Lesson 3.5 and Wrap-Up Quiz
September 28	Start Assignment 3
September 29	Continue Assignment 3, **Assignment 2 Due at 10:00am ET**
September 30	M4 Warm-Up Quiz, Lesson 4.1, Read Assignment 4
October 1	Lesson 4.2, **Module 3 Quizzes and Concept Checks Due at 11:59pm ET**

October 4	Lesson 4.3
October 5	Lesson 4.4
October 6	Lesson 4.5, **Assignment 3 Due at 10:00am ET**
October 7	Lesson 4.6 and Lesson 4.7
October 8	M4 Wrap-Up Quiz, Start Assignment 4
October 11-15	Reading Week
October 18	Continue Assignment 4
October 19	M5 Warm-Up Quiz, Lesson 5.1, Read Assignment 5
October 20	Lesson 5.2

October 21	Lesson 5.3
October 22	M5 Wrap-Up Quiz, Start Assignment 5, **Module 4 Quizzes and Concept Checks Due at 11:59pm ET**
October 25	Continue Assignment 5
October 26	M6 Warm-Up Quiz, Read Assignment 6
October 27	Lesson 6.1, **Assignment 4 Due at 10:00am ET**
October 28	Lesson 6.2
October 29	Lesson 6.3, M6 Wrap-Up Quiz, **Module 5 Quizzes and Concept Checks Due at 11:59pm ET**
November 1	Start Assignment 6
November 2	Continue Assignment 6

November 3	M7 Warm-Up Quiz, Lesson 7.1, Read Assignment 7, **Assignment 5 Due at 10:00am ET**
November 4	Lesson 7.2
November 5	Lesson 7.3, **Module 6 Quizzes and Concept Checks Due at 11:59pm ET**
November 8	Lesson 7.4
November 9	Lesson 7.5
November 10	M7 Wrap-Up Quiz, Assignment 7, **Assignment 6 Due at 10:00am ET**
November 11	Continue Assignment 7
November 12	M8 Warm-Up Quiz, Read Assignment 8, **Module 7 Quizzes and Concept Checks Due at 11:59pm ET**
November 15	Lesson 8.1, Lesson 8.2

November 16	Lesson 8.3, Lesson 8.4
November 17	Lesson 8.5, Lesson 8.6, **Assignment 7 Due at 10:00am ET**
November 18	M8 Wrap-Up Quiz, Assignment 8
November 19	Continue Assignment 8, **Module 8 Quizzes and Concept Checks Due at 11:59pm ET**
November 22	M9 Warm-Up Quiz, Read Assignment 9
November 23	Lesson 9.1
November 24	Lesson 9.2, **Assignment 8 Due at 10:00am ET**
November 25	Lesson 9.3
November 26	M9 Wrap-Up Quiz, Assignment 9, **Module 9 Quizzes and Concept Checks Due at 11:59pm ET**

November 29	Continue Assignment 9
November 30	M10 Warm-Up Quiz, Lesson 10.1
December 1	Lesson 10.2, Read Final Project, **Assignment 9 Due at 10:00am ET**
December 2	Lesson 10.3, Read Final Project, **Module 10 Quizzes and Concept Checks Due at 11:59pm ET**
December 3	M10 Wrap-Up Quiz, Read Final Project, **Module 10 Quizzes and Concept Checks Due at 11:59pm ET**
December 4-14	Final Project
December 15	Final Project, **Final Project Due** at 10:00am ET

Grade Breakdown

Each component of the course will have a grade attached and be weighted as follows:

Component	Weight (%)
Warm-Up Quizzes	5%
Concept Checks	10%
Wrap-Up Quizzes	5%
Assignments	60%
Final Project	20%

Quiz Questions

The quizzes will each have one attempt for non-programming problems and unlimited attempts for programming problems. The quizzes will be weighted equally (not according to how many problems solved per quiz as some quizzes might have more problems than others) so each quiz is worth 0.5% of your final grade.

Concept Checks

Your concept check grade is computed as the sum total points earned over all problems completed divided by 90% of the total number of points for all concept checks in the entire course up to a maximum of 100%. Some modules have more questions than others and hence have more questions so to not overemphasize simpler modules like module 1, we want to weigh the concept checks questions equally throughout the course. Questions are also potentially worth different amounts so it is worth checking how much a problem is worth.

The Concept Check questions will each have two attempts for non-programming problems and unlimited attempts for programming problems. This allows you to make mistakes while learning the content and still obtain a good grade. Some of these are intentional — questions that are a bit beyond

what you can do in order to reinforce understanding and some are questions that have common misconceptions that are meant to trick you in order to resolve a misconception. Again, do not be worried about getting perfect on everything because you are not expected to. Mistakes are going to happen because you are learning and multiple attempts for these concept check questions is meant to allow for some of these mistakes to occur. If you follow through all of the coursework, start assignments early, and ask for help, you should be able to do really well in this course.

Please note that Concept Check questions **will occur in required videos** and so you should also watch the required videos to obtain full marks on these problems. Videos must be watched from within the browser in order to activate the questions.

Solutions to concept checks **will not be provided to students**. There are several reasons for this:

1. We often don't have solutions to the problems. (Most of our test cases are done using the check module).
2. Out of concern for academic integrity this term and across different terms, we do not feel we should release either test data or solutions.
3. With respect to the above, more is learnt when you **struggle to find the answer** than is learnt when you quickly read a solution. In other words, active learning is far better than passive learning. Note that we will still post solutions to all assignments so you will get solutions to some problems. However it cannot be stressed enough that struggling to find the answer is worth more than being given it. This being said, staff is more than happy to help students get to the answer via office hours either before or after the due dates.

In order to maintain a level of success in the course, students should not miss the completion of any modules.

Progress

There is a progress tab that you can find near the top left of this page to let you know how you are doing in the quizzes and Concept Check questions.

Assignments

Assignments will be submitted to MarkUs through our online platform. Once you submit an assignment to MarkUs, you will receive an email consisting of basic tests that you passed or failed. Students should check their basic tests email to ensure that the code meets the specification exactly. We will not accept submissions that do not match our test output exactly.

There will be no extensions on assignments. If sick, please email our ISC (Scott King, sfking@uwaterloo.ca) documentation to discuss alternate arrangements. Reweighting of assignments is not automatic even with a valid doctor's note and is up to the sole discretion of the ISC or instructor to allow for reweighting.

Assignments are weighted evenly.

We will also only take your best 8 assignments of the first 9 assignments so you can miss a week if your workload becomes too onerous. However, **if you join the course late and cannot complete Assignment 1 on time, this assignment will still count as your lowest assignment grade!** In other words, you do not get to drop two assignments if you join after the deadline of Assignment 1.

Remark requests for assignments can be made up to one week after the assignment has been returned.

Final Project

There will be a final project due Wednesday December 15th at 10:00am ET. More details to come at the end of the term.

Note: The Final Project cannot be dropped and must count towards your final grade. However you need not pass the final project to pass the course.

Missed Assessments

There will be no extensions on assignments and late assignments will not be accepted! Make sure you understand what time zone you are in and when our due dates are in Eastern Time. If sick, please email our ISC (sfking@uwaterloo.ca) with documentation (such as VIF) to discuss alternate arrangements. Reweighting of assignments is not automatic even with a valid doctor's note and is up to the sole discretion of the ISC or instructor to allow for reweighting. We will only accept doctor's notes on at most 3 assignment components so make sure you are on top of your studies.

Saving Work

When you press on the **Run Code** button or the **Submit Code** button, your work will save. Please make sure you do this often! There is often no recourse if you fail to save your work so please run your code often!

MOSS

MOSS (Measure of Software Similarities) is used in this course as a mean of comparing students' assignments in order to support academic integrity.

Academic Integrity

Please note that if you do get caught in an academic integrity offense - the assignment you cheated on cannot be the dropped assignment.

Academic Integrity

- In order to maintain a culture of academic integrity, members of the University of Waterloo community are expected to promote honesty, trust, fairness, respect, and responsibility. **If you have not already completed the online tutorial regarding academic integrity you should do so as soon as**

possible. Undergraduate students should see the Academic Integrity Tutorial and graduate students should see the Graduate Students and Academic Integrity website.

- Proper citations are part of academic integrity. Reminder that **you are not permitted to look up either full or partial solutions online or in printed sources**. If using course material in your solutions, simply cite where it came from in a comment. There is no formal style here so long as it is easy to understand.
- **Do not post your code or any questions from this course anywhere publicly online**. This includes but is not limited to on Github, StackOverflow, Reddit, CourseHero, Chegg and so on. You may create private repositories however to share with employers if you deem this necessary. Violators will be treated as academic integrity offenses and can carry penalties including -5% on your course grade. This penalty can even be applied for cheating that occurs on Concept Check and Quiz questions! Please refer to The University of Waterloo's Code Sharing Policy for more information.
- Each assignment question will require you to digitally sign an academic integrity statement before you can view the questions. Failure to accept the statement will result in you not being able ot view the assignmeents and hence result in your assignments and projects not being graded.
- Please note that if you do get caught in an academic integrity offense - the assignment you cheated on cannot be the dropped assignment.
- Please note that we encourage high level discussion of your assignments but do not share code or precise details. When you write your final version of your code, you should do so without your notes to ensure that you've understood the material. We recommend posting on our discussion forum for help and framing your question in a way that it can be made public. Code posts on our discussion forum should **always** be private.
- **MOSS (Measure of Software Similarities)** is used in this course as a mean of comparing students' assignments in order to support academic integrity.
- For further information on academic integrity, please visit the Office of Academic Integrity.

Administrative Policy

Academic integrity: In order to maintain a culture of academic integrity, members of the University of Waterloo community are expected to promote honesty, trust, fairness, respect and responsibility. [Check the Office of Academic Integrity for more information.]

Grievance: A student who believes that a decision affecting some aspect of their university life has been unfair or unreasonable may have grounds for initiating a grievance. Read Policy 70, Student Petitions and Grievances, Section 4. When in doubt, please be certain to contact the department's administrative assistant who will provide further assistance.

Discipline: A student is expected to know what constitutes academic integrity to avoid committing an academic offence, and to take responsibility for their actions. [Check the Office of Academic Integrity for more information.] A student who is unsure whether an action constitutes an offence, or who needs help in learning how to avoid offences (e.g., plagiarism, cheating) or about "rules" for group work/collaboration should seek guidance from the course instructor, academic advisor, or the undergraduate associate dean. For information on categories of offences and types of penalties, students should refer to Policy 71, Student Discipline. For typical penalties, check Guidelines for the Assessment of Penalties.

Appeals: A decision made or penalty imposed under Policy 70, Student Petitions and Grievances (other than a petition) or Policy 71, Student Discipline may be appealed if there is a ground. A student who believes they have a ground for an appeal should refer to Policy 72, Student Appeals.

Note for students with disabilities: AccessAbility Services, located in Needles Hall, Room 1401, collaborates with all academic departments to arrange appropriate accommodations for students with disabilities without compromising the academic integrity of the curriculum. If you require academic accommodations to lessen the impact of your disability, please register with AccessAbility Services at the beginning of each academic term.