
Course Information

Instructor:

Lars Doyle, email: larsdoyle@cunet.carleton.ca

Lecture Hours:

Tuesday and Thursday, 8:35AM – 9:55AM

Office Hours:

Instructor and TA office hours are posted on Brightspace

Calendar Description

"Introduction to computer science and programming, for computer science students. Topics include: algorithm design; control structures; variables and types; linear collections; functions; debugging and testing. Special attention is given to procedural programming in a modern language, computational thinking skills, and problem decomposition."

Course Modality

IN-PERSON SECTION. Not Suitable for Online Students.

Required Textbook

There is one (1) **required** textbook (also available to read for free online):

Sweigart, A. (2017). Automate the Boring Stuff with Python, 2nd Edition.

<https://automatetheboringstuff.com/>

Topics Covered

If a student attends every lecture and completes every assignment and tutorial, then by the end of this course that student should be able to:

- design and express simple algorithm using flowcharts and pseudocode
- implement simple algorithms using the Python 3 programming language
- create expressions with arithmetic, logical, and comparative operations
- create branching and repeating control structures, with and without nesting
- explain variable assignment, primitive data types, and the basics of computer memory
- design and implement functions and explain function scope and recursion
- create, access, and manipulate linear, multidimensional, and associative collections
- implement and discuss the efficiency of some basic sorting and searching algorithms
- describe and make effective and appropriate use of artificial intelligence-based coding tools

Laptop Requirement (School of Computer Science)

Every student that has been enrolled in a 1000-level (i.e., first year) course offered by the School of Computer Science after the 2020/2021 school year is required to have a laptop. For more information, please visit <https://carleton.ca/scs/scs-laptop-requirement/> and then review the requirements at <https://carleton.ca/scs/scs-laptop-requirement/laptop-specs/>.

Assessment Scheme

| | | | |
|----------------------------|-------------|------------------------------|-------------|
| Tutorials (1% each) | 10 % | Assignments (5% each) | 40 % |
| Quizzes (15% each) | 30 % | Final Examination | 20 % |

Final grades will be determined using the above scheme, and **no extra credit assignments will be provided under any circumstances.**

Tutorials

Tutorials are held weekly starting on the week of Jan. 15. **Every tutorial exercise is mandatory. Attendance to the sessions for Tutorial 6 and Tutorial 7 (i.e., the weeks of March 4th and March 11th) are also mandatory**, but attendance to the sessions for all other tutorials is recommended but not required. Unless previously arranged with the instructor, you should attend the tutorial in which you are registered.

Quizzes

Quizzes are mandatory and will be conducted online using Brightspace. **Refer to the tentative calendar** posted to Brightspace for the exact dates.

Assignments

Assignments are mandatory. The best 8 of 10 assignments will count for your grade. You will upload your assignment submissions to Brightspace. The assignment component of your final grade is computed using only **the best eight of the scores you receive** on your assignments. As a result, **the instructor does not grant exemptions** for the assignments under any circumstances. You are expected to work on your assignments consistently once they are released (**uploading your progress at least once every 48 hours**). **Under extenuating circumstances**, if you are seeking additional accommodations (perhaps due to an ongoing medical issue, for instance), you may **petition the Associate Dean's office**. Most of the assignments in this course (i.e., **Assignments 1-7**) were **designed to be completed individually** and **without the use of any artificial intelligence-based tools**. **Assignment 8 is designed to be completed in pairs** but still **without artificial intelligence-based tools**, and **Assignments 9 and 10 were designed to be completed individually** but **with the use of intelligence-based tools for content and code generation**. **Unless it is explicitly stated otherwise, the use of any artificial-intelligence based tools will be considered academic misconduct.** This includes, but is not limited to, chatbots (e.g., ChatGPT, Google Bard, Bing Chart), research assistants (e.g., Elicit), and image generators (e.g., Stable Diffusion, Dall-E), etc.

Final, closed-book examination (scheduled by the registrar).

Plagiarism Policy

If you are unsure of the expectations regarding academic integrity (how to use and cite references, if collaboration with lab- or classmates is permitted (and, if so, to what degree), then you must ask your instructor. **Sharing assignment or quiz specifications or posting them online** (to sites like Chegg, CourseHero, OneClass, etc.) is **always considered academic misconduct** (at any time, **even after the course has concluded**).

You are never permitted to post, share, or upload course materials (even for portfolio purposes) without receiving explicit permission from your instructor. Academic integrity offences are reported to the office of the Dean of Science. Information, process and penalties for such offences can be found on the ODS webpage: <https://science.carleton.ca/students/academic-integrity/>.

There is a separate plagiarism policy document for this course that can be found on the course website. **Students must read this document thoroughly and must agree to adhere to this policy** (and all policies stated in this course outline) **before any resources will be made available.**

In the event that a student has been **found to have committed an instructional offence**, a penalty will be applied to that student's final grade. **If the penalty applied** by the Office of the Associate Dean is **less than the total value of the assignment**, the **remaining weight is shifted onto the weight of the final exam**. Consider the following example: if the course has an assignment worth 10% and a final worth 40% and a student plagiarizes and receives a 50% deduction to his or her assignment, their final exam would be worth 45% of the final mark and the **plagiarized assignment would be worth nothing**. To clarify, 50% of the 10% allocated to the assignment was lost and the remaining 50% of the 10% allocated to the assignment was shifted to the final.

Students are invited to **discuss any concerns with the instructor at the earliest opportunity.**

Important Considerations

Assignments submissions are handled electronically (i.e., through Brightspace) and although assignments are technically due on Fridays by 11:59pm EST, submissions will also be accepted up to a "cut-off" deadline 48 hours later (i.e., on Sundays at 11:59pm EST). There is no further "grace period" beyond that, and any assignment submitted even one minute after the "cut-off" deadline is considered "late" and will receive a mark of zero.

Technical problems do not exempt you from the requirements above, so if you wait until the last minute and then have issues with your internet connection (for instance), you will still receive a mark of zero. Consequently, you are formally required (in this course) to:

- periodically upload your progress (i.e., upload your progress at least once every 48 hours)
- attempt your final submission at least one hour in advance of the due date and time

For each assignment, you will be submitting files that contain source code, and these files must have the correct filenames and the specified format. Assignments that are incorrectly named or in

the incorrect format will be penalized and may receive a mark of zero. If any of the source code files you submit does not run it will receive a mark of zero. Consequently, after you upload your submission you are required to re-download it immediately and ensure that:

- your submission was the correct type of file and has the correct filename
- each of your source code files can be executed in Python 3.11

You are expected to demonstrate good programming practices at all times and you are always required to observe file name and format requirements, use meaningful variable names and type-hinting, and thoroughly comment your code. Please also note that your code will be penalized if it is poorly written, and a functional, but poorly designed solution will not receive full marks. You are also expected to do the necessary preparatory work before you begin programming. You may be asked to present either pseudocode or a flowchart before you will receive any assistance from the instructor or a teaching assistant.

It is your responsibility to ensure that your quiz, tutorial, and assignment marks posted to Brightspace are correct, and you must do so within one week of the date the marks were released. Concerns or complaints about the grading of must be communicated (first to the teaching assistant, then, if the result is unsatisfactory, to the instructor) within that one week period after the release of the marks. After that one week, no further consideration will be offered and any student requests to correct or revise marks will not be accepted for any reason.

Students with an **illness on the day of a quiz or tutorial may be granted an exemption only if they submit a copy of Carleton's official Self-Declaration** (in lieu of a medical certificate) Form, available online from <https://carleton.ca/registrar/cu-files/covid-19-self-declaration-form/>.

Please note that a student cannot, for any reason, be exempted from more than two (2) tutorials or more than one (1) of the quizzes. No provision is made for missed assignments, beyond the fact that only the best eight (8) of the 10 weekly assignments will be used when determining the final grade.

Additional Notes

Every student that has been enrolled in a **1000-level (i.e., first year) course** that is offered by the **School of Computer Science** after the 2020/2021 school year is **required to have a laptop**. For more information, please visit <https://carleton.ca/scs/scs-laptop-requirement/> and then review the requirements at <https://carleton.ca/scs/scs-laptop-requirement/laptop-specs/>.

In addition to the time spent attending lectures, students can expect to spend **at least eight (8) hours per week** on this course. Students are responsible for all course materials, including lecture notes, tutorial exercises, and all materials discussed in class and on any of the official discussion boards.

Students are asked to pose all questions related to course content using the official discussion boards; students must avoid emailing the instructor directly unless the question contains confidential information or is of a personal nature.

The instructor will attempt to answer every student email received within three business days of the time the message was received, unless the email requests information already posted on the official discussion boards or in the course outline. To ensure that all announcements are received, students are expected to check their email on a daily basis.

All materials created for this course (including, but not limited to, lecture notes, in-class examples, tutorial exercises, assignments, examinations, and posted solutions) **remain the intellectual property of the instructor or Dr. Robert Collier**. These materials are intended for the personal and non-transferable use of students registered in the current offering of the course. Reposting, reproducing, or redistributing any course materials, in part or in whole, without the written consent of the instructor, is strictly prohibited.

Undergraduate Academic Advisor

The Undergraduate Advisor for the School of Computer Science is available in Room 5302C HP, by telephone at 520-2600, ext. 4364 or by email at undergraduate_advisor@scs.carleton.ca.

The undergraduate advisor can assist with information about prerequisites and preclusions, course substitutions or equivalencies, understanding your academic audit and the remaining requirements for graduation. The undergraduate advisor will also refer students to appropriate resources such as the Science Student Success Centre, Learning Support Services and the Writing Tutorial Services.

You are also required to read the information at:

<http://calendar.carleton.ca/undergrad/regulations/academicregulationsoftheuniversity/>

Computer Laboratories

Under normal circumstances, students from the School of Computer Science (SCS) can also access one of the designated computers labs for their courses. The lab schedule can be found at:

<https://carleton.ca/scs/tech-support/computer-laboratories/>

Further information about the computer labs and technical support can be found at:

<https://carleton.ca/scs/technical-support/>. Technical support is also available in room HP5161 Monday to Friday from 9:00 until 17:00 or by emailing SCS.Tech.Support@cunet.carleton.ca.

University Policies

For information about Carleton's academic year, including registration and withdrawal dates, see Carleton's Academic Calendar at:

<https://calendar.carleton.ca/academicyear/>

Pregnancy Obligation

Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, visit:

<https://carleton.ca/womensstudies/resources-and-links/equity-services/>

Religious Obligation

Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, visit:

<https://carleton.ca/equity/focus/discrimination-harassment/religious-spiritual-observances/>

Academic Accommodations for Students with Disabilities

If you have a documented disability requiring academic accommodations in this course, please contact the Paul Menton Centre for Students with Disabilities (PMC) at 613-520-6608 or pmc@carleton.ca for a formal evaluation or contact your PMC coordinator to send your instructor your Letter of Accommodation at the beginning of the term. You must also contact the PMC no later than two weeks before the first in-class scheduled test or exam requiring accommodation (if applicable). After requesting accommodation from PMC, meet with your instructor as soon as possible to ensure accommodation arrangements are made. For more details, visit the Paul Menton Centre website. For more information, visit:

<https://carleton.ca/pmc>

Survivors of Sexual Violence

As a community, Carleton University is committed to maintaining a positive learning, working and living environment where sexual violence will not be tolerated, and survivors are supported through academic accommodations as per Carleton's Sexual Violence Policy. For more information about the services available at the university and to obtain information about sexual violence and/or support:

<https://carleton.ca/sexual-violence-support>

Accommodation for Student Activities

Carleton University recognizes the substantial benefits, both to the individual student and for the university, that result from a student participating in activities beyond the classroom experience. Reasonable accommodation must be provided to students who compete or perform at the national or international level. Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, see the policy at:

<https://carleton.ca/senate/wp-content/uploads/Accommodation-for-Student-Activities-1.pdf>

Student Academic Integrity Policy

Every student should be familiar with the Carleton University student academic integrity policy. A student found in violation of academic integrity standards may be awarded penalties which range from a reprimand to receiving a grade of F in the course or even being expelled from the program or University. Examples of punishable offences include: plagiarism and unauthorized co-operation or collaboration. Information on this policy may be found at:

<https://carleton.ca/registrar/academic-integrity/>

Plagiarism

As defined by Senate, "plagiarism is presenting, whether intentional or not, the ideas, expression of ideas or work of others as one's own". Such reported offences will be reviewed by the office of the Dean of Science. Standard penalty guidelines can be found at:

<https://carleton.ca/registrar/academic-integrity/>

Unauthorized Co-operation or Collaboration

Senate policy states that "to ensure fairness and equity in assessment of term work, students shall not co-operate or collaborate in the completion of an academic assignment, in whole or in part, when the instructor has indicated that the assignment is to be completed on an individual basis". Please refer to the course outline statement or the instructor concerning this issue.