

Carleton University School of Computer Science  
Introduction to Computer Science I



COMP 1405/1005 B

Winter 2023

Course Outline

---

<b>Instructor:</b>	Connor Hillen (He/Him)	<b>Lecture Hours:</b>	Tue. Thu. 11:35 - 12:55
<b>Email:</b>	<a href="mailto:connorhillen@cunet.carleton.ca">connorhillen@cunet.carleton.ca</a>	<b>Website:</b>	<a href="https://brightspace.carleton.ca">https://brightspace.carleton.ca</a>
<b>Office Hours:</b>	Available on Brightspace	<b>Location:</b>	Refer to Class Schedule

---

**New to University?** Teaching Assistants (TAs) support the course by grading assessments, supervising tutorials, and providing assistance with course content during office hours. You are **encouraged** to attend office hours (schedule is on Brightspace) with specific questions to get course and assignment support.

*Carleton University acknowledges the location of its campus on the traditional, unceded territories of the Algonquin nation.*

## 1. About the Course

---

**Calendar Description:** Introduction to computer science and programming. 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.

**Textbooks and Other Resources:** There is one **required textbook**, also freely available online.

- Sweigart, A. (2017). Automate the Boring Stuff with Python, 2nd Edition.  
<https://automatetheboringstuff.com/>

**Objectives:** The goal of this course is to introduce you to **programming** and **computational thinking**. A student who completes all of the material in the course will learn about algorithms, be able to apply problem solving techniques to a wide range of problems, differentiate different types of data, and be able to solve problems using the Python programming language. While this course uses Python, the concepts taught throughout this course can apply to many different programming languages.

**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
- Trace simple algorithms and programs without the aid of a computer
- Design and implement functions and explain function scope and recursion
- Create, access, and manipulate linear, multidimensional, and associative collections
- Implement some basic sorting algorithms (i.e., selection sort, bubble sort, merge sort)
- Implement some basic searching algorithms (i.e., linear search, binary search)
- Describe some simple approaches to debugging, test case design, and error handling

## 2. Assessments

---

**Grading:** Your grade in this course is made up of various parts. There will be **weekly tutorials** (beginning the week of January 16th), the **best 8 of 11 weekly assignments** (beginning the week of January 16th), **2 quizzes** (open for the 48-hour periods beginning February 16th and March 23rd, respectively), and a **final examination** (scheduled by the school registrar). There will be **no extra credit assignments**. Your final grades will be calculated as following:

Tutorials (10x1%).....	10%
Assignments (Best 8 of 11 x5%) .....	40%
Quizzes (Online Asynchronous, 2x15%) .....	30%
Final Exam (Scheduled by Registrar).....	20%

**Assignments:** Completing assignments is **mandatory**. You will be uploading your 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**. Due to this built-in flexibility, **the instructor will not grant exemptions for assignments under any circumstances**. You are expected to work on your assignments **consistently** upon release, and upload your progress to the submission periodically (ideally, at least **once every 48 hours**). As you are expected to submit periodically and consistently, technical issues near the submission deadline will not be considered for exemptions. **If you are experiencing extenuating circumstances** requiring additional accommodations (for example: ongoing medical issues), you may **petition the Associate Dean's office**. Assignments are all due on **Fridays at 11:59PM EST**, and you can **not expect to receive support following this deadline**, but assignments will be accepted without penalty until Sundays at 11:59PM.

**Tutorials:** Completing the tutorial material is **mandatory** to receive the grades and makeups will not be provided; however, **attendance** to the tutorial session itself is **recommended to receive TA assistance, but is not required**. If you are attending the tutorial, you should be attending the tutorial **section in which you are registered**, unless you have made special arrangements with the instructor. If you are struggling with the material, attendance is **highly recommended**.

**Quizzes:** Quiz participation is **mandatory**. Quizzes will be conducted online using Brightspace. Quizzes can be completed any time within the 48-hour period. During the days that the quiz is running, no lectures will be held - you may use the regularly scheduled time to complete the quiz, if you choose, although no additional support can be provided during this time; you will not be able to communicate with the TAs or instructor, so please plan ahead.

**Quiz and Tutorial Exemptions:**

If you are ill during the period of a quiz or tutorial, you may be granted an exemption only if you submit a copy of Carleton's official **Self-Declaration Form** (in lieu of a medical certificate) available online here: <https://carleton.ca/registrar/cu-files/covid-19-self-declaration-form/>

Students **cannot for any reason** be exempted from **more than one (1) quiz**.

A self-declaration form must be emailed to the instructor within seven days of the missed quiz.

Students **cannot for any reason** be exempted from **more than two (2) tutorials**.

A self-declaration form must be emailed to the instructor within seven days of the missed tutorial.

### 3. Important Course Policies

---

**Plagiarism Policy:** A separate **plagiarism policy document** which describes what might be considered an academic offence in this course 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 course resources will be made available**.

For information about up-to-date penalties regarding academic integrity violations, refer to the following resource: <https://science.carleton.ca/students/academic-integrity/>

**Communication Policy:** In order to reduce the volume of emails and expedite responses, the only emails that should be sent to the instructor, teaching assistants, or lab coordinators should **require confidentiality** or is personal in nature, and be handled via direct email from a Carleton email address.

Students are expected to **check their Carleton email addresses daily for announcements**. Reminders for upcoming assignment deadlines will be handled using the default Brightspace notifications system, so if you require reminders, check that your Brightspace settings will send notifications.

Students should only **expect responses within 3 business days** during **business hours (8:30AM - 5:30PM, Monday - Friday)**. Plan ahead - questions asked over the weekends may go unanswered until the following week.

To make sure communication is handled in a timely manner, follow these guidelines:

1. Any **email communication** must include **your name, student ID, and course code** and must be sent from an official Carleton email address.
2. **Assignment questions** should *first* be dealt with by discussing with a TA during office hours or via the Brightspace forums
3. **Course material assistance** can be handled via Brightspace forums or, if time allows, during instructor office hours.
4. **For technical issues**, first look on the Brightspace forums or the course resources, then check the [SCS technical support page](#), then inquire with teaching assistants who may forward your concern to the instructor.
5. **Students must behave in a professional manner in all communications**. Any communication that is seen as abusive, discourteous, or unprofessional may be moderated, ignored, or reported to the university for disciplinary action.

**Grade Disputes:** It is **your responsibility** to ensure that quiz, tutorial, and assignment marks posted to Brightspace are accurate and correct **within one week** of the date the marks were released. Concerns must first be communicated to the teaching assistant that graded the assessment, then if the result is unsatisfactory, can be forwarded to the instructor. After one week, **no further consideration will be offered and marks will not be changed**.

**Office Hours:** TA Office hours are available to help with material, assignment disputes, or assignment clarification. TA office hours schedules will be posted and made available to the course website. If you require additional support with the course material, you may request office hours with the instructor following the instructions posted to the

course website. While I encourage requesting office hours to get the support you need early, please understand that availability is limited and not all requests may be fulfilled.

## 4. Important Considerations

---

1. **Assignments are technically due on Fridays by 11:59PM EST**, although a grace period is provided which allows submissions without penalty until Sundays at 11:59PM EST, at which point submissions will be cut off. You should not expect to receive additional support during this grace period.
2. **Verifying the correctness of assignment submissions is your responsibility.**
  - a. You are expected to **submit regularly** as you work on the assignment.
  - b. You are expected to **download and test your submission** to make sure it is both complete and correct. If your submission is missing files, or if your code can not be run, or if your code can not be opened and read for marking purposes, you may receive a grade of zero.
  - c. You are expected to **verify all submission requirements** (eg. file types, file names) are met. If files are named incorrectly or packaged incorrectly, you may be penalised up to receiving a zero.
  - d. You are expected to submit long before the final deadline; any submissions submitted even one minute following the grace period cut-off (Sundays at 11:59PM EST) will receive a zero.
3. **You can expect to spend at least eight (8) hours per week on this course, in addition to lecture time.**
4. **You are required to have a laptop.** 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. This includes COMP1001, COMP1005, and COMP1006. 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/>.
5. **Questions should be posed on official course discussion boards.** As per the communication policy, all email communication should be kept to a minimum and utilised only if the nature is private or personal.
6. **All materials created for this course remain the intellectual property of the instructor.** 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**.

## 5. Course Modality

---

All lectures in this course will be held in-person, and in-person attendance is expected. For your convenience and in case of illness, all lectures will be **attempted to be streamed and recorded via Zoom**, but quality of the stream and recording can not be guaranteed. The links to the Zoom meeting will be available on the course website. There is always the risk of technical issues occurring with these lectures, and students should make an effort to attend in-person if they are comfortable and capable. **Please note that recordings may take up to one week (7 days) to post, and should not be relied upon as a consistent alternative to attendance.**

**Please note that by participating in these lectures, either online or in-person, that you may be included in these recordings.** When attending on Zoom, Zoom will always notify meeting participants that a meeting is being recorded. It is not possible to disable this notification.

*These recordings will only be available to the members of this class, and I ask that everyone be respectful and not allow others to view the recordings. At the end of the course, the recordings will be deleted.*

Please note that recordings are protected by copyright. The recordings are for your educational use, and you are not permitted to publish to third party sites. **If you have concerns about being recorded**, please email the instructor directly so we can discuss these.

Please note that modality may change if necessary - for example, courses may be pre-recorded or online-only if the instructor falls ill.

## 6. Special Considerations

---

It is important to remember that COVID-19 is still present in Ottawa. The situation can change at any time and the risks of new variants and outbreaks are very real.

There are a number of actions you can take to lower your risk and the risk you pose to those around you including being vaccinated, wearing a mask, staying home when you're sick, washing your hands and maintaining proper respiratory and cough etiquette.

**Feeling Sick?** Remaining vigilant and not attending work or school when sick or with symptoms is critically important. **If you feel ill or exhibit COVID-19 symptoms do not come to class or campus.** If you feel ill or exhibit symptoms while on campus or in class, please leave campus immediately. **In all situations, you must follow Carleton's symptom reporting protocols.**

**Masks?** Carleton has paused the COVID-19 Mask policy, but continues to **strongly recommend masking when indoors**, particularly if physical distancing cannot be maintained. It may become necessary to quickly reinstate the mask requirement if pandemic circumstances were to change.

**Vaccines?** While proof of vaccination is no longer required as of May 1 to attend campus or in-person activity, it may become necessary for the University to bring back proof of vaccination requirements on short notice if the situation and public health advice changes. **Students are strongly encouraged to get a full course of vaccination, including booster doses as soon as they are eligible, and submit their booster dose information in cuScreen as soon as possible.** Please note that Carleton cannot guarantee that it will be able to offer virtual or hybrid learning options for those who are unable to attend the campus.

All members of the Carleton community are required to follow requirements and guidelines regarding health and safety which may change from time to time. For the most recent information about Carleton's COVID-19 website (<https://carleton.ca/covid19/>) and review the Frequently Asked Questions (FAQs) (<https://carleton.ca/covid19/faq/>). Should you have additional questions after reviewing, please contact [covidinfo@carleton.ca](mailto:covidinfo@carleton.ca).

**Doctor's note or medical certificate:** in effect for Winter 2023 term. In place of a doctor's note or medical certificate, students are advised to complete the [self-declaration form](#) available on the Registrar's Office website to request academic accommodation for missed course work including exams and assignments. Students should also discuss with the course instructor the required accommodations arising from the COVID-19 situation.



## 7. School of Computer Science Information

---

**Undergraduate Advisor:** The Undergraduate Advisors for the School of Computer Science are available in Room 5302HP; or by email at [scs.ug.advisor@cunet.carleton.ca](mailto:scs.ug.advisor@cunet.carleton.ca). The undergraduate advisors can assist with information about prerequisites and preclusions, course substitutions/equivalencies, understanding your academic audit and the remaining requirements for graduation. The undergraduate advisors will also refer students to appropriate resources such as the Science Student Success Centre, Learning Support Services and Writing Tutorial Services.

**SCS Computer Laboratory:** Students taking a COMP course can access the SCS computer labs. The lab schedule and location can be found at: <https://carleton.ca/scs/tech-support/computer-laboratories/>. All SCS computer lab and technical support information can be found at: <https://carleton.ca/scs/tech-support/>. Technical support staff may be contacted in-person or virtually, see this page for details: <https://carleton.ca/scs/tech-support/contact-it-support/>

## 8. University Policies

---

For information about Carleton's academic year, including registration and withdrawal dates, see [Carleton's Academic Calendar](#).

**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 [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 [Equity Services](#).

**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](mailto: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](#).

**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, visit: [carleton.ca/sexual-violence-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](#).

**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 unauthorised co-operation or collaboration. Information on this policy may be found [here](#).

**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 [here](#).

**Unauthorised 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.

...And I hope you enjoy the course and have a great term!