COMP1005B (Winter 2025)

Introduction to Computer Science I

Instructor: Connor Hillen

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Office Location: 5370 Herzberg

Best Ways to be in Touch: In class, during student hours, Brightspace forums. Private concerns via email or student hours, include [COMP1005] in the subject line.

Teaching Assistant: A list of teaching assistants and their contact/student hours information will be posted once the course starts along with our Lab Coordinator who primarily handles TA-related concerns.

Class Location: Zoom Link will be posted to Brightspace prior to first lecture.

Lecture Times: Mon. Wed. 16:05 – 17:25

Tutorial Times:

- B1: Tuesday 18:05-19:25
- B2: Monday 18:05-19:25
- B3: Wednesday 18:05-19:25
- **Tutorials begin Monday, Jan. 13th**

Course Website:
https://brightspace.carleton.ca/d2l/home/292575

Important dates and deadlines can be found here: https://carleton.ca/registrar/registration/dates/academic-dates/, including class suspension for fall, winter breaks, and statutory holidays.

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.

Precludes: BIT 1400, CGSC 1005, COMP 1405, ECOR 1041, ECOR 1042, ECOR 1051, ECOR 1606, ITEC 1400, ITEC 1401, SYSC 1005.

Prerequisite(s): None

Learning Material(s) and Other Course/Lab-Related Resources

Learning Material	**Options for Purchasing *(e.g., Bookstore, Used, etc.)***	**Approximate Cost**
Think like a Computer Scientist: Interactive Edition	Webpage: https://runestone.academy/ns/books/published/thinkcspy/index.html	$0
Python 3.13	https://www.python.org/downloads/release/python-3131/	$0
VS Code	https://code.visualstudio.com/	$0

Runestone account is optional, but can provide note taking and progress logging with the course textbook. Expect to spend at least **eight (8)** hours per week on this course in addition to the lectures.

Topics Covered and Learning Outcomes

Week	Topic/Content	Readings/Prep for Class
1	Introductions	Read outline and policies
2	Problem Solving	Install Python (during/before tutorials)
3	Data & Conditions	Chapter 1 Glossary, Chapter 7 glossary, Chapter 1.1-1.5
4	Lists & Strings	Chapter 9 glossary, Chapter 10 glossary
5	Looping & Functions	Chapter 4 glossary
6	Quiz & Review	Prepare questions to ask in-class!
7	Winter Break	
8	Debugging & Files	TBA
9	Collections	TBA
10	Searching and Sorting	TBA
11	Quiz & Review	Prepare questions to ask in-class!
12	Recursion	Chapter 16 for in-class context
13	Object-Oriented	TBA
14	Exam Review	Prepare questions to ask in-class!

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.

I believe that all students can reach these goals. This content can be challenging for many folks and if you feel you are alone in falling behind, please know that many different people are facing challenges and you are encouraged to reach out for support during student hours for help getting back on track. Even experienced professionals, a lot of programming can involve things not working, confusing and frustrating errors, and unexpected gaps in knowledge. Ask questions in class, attend student hours, and try to use each error as a learning opportunity.

I am a big proponent of feedback informed teaching, and there will be multiple anonymous surveys throughout the class that I will encourage you to fill out. I do my best to review these to understand how everyone is doing and to identify areas the course can be improved. My goal is helping you learn the material and feel prepared for your future courses and careers.

Assessment Scheme

COMPONENT	GRADE VALUE	DATE
Tutorials	10 % (1%x10)	Begins Week 3
Assignments	40 % (10%xBest 4 of 5)	
Assignment 1		Due Fri. January 31
Assignment 2		Due Fri. February 2
Assignment 3		Due Fri. March 07
Assignment 4		Due Fri. March 21
Assignment 5		Due Fri. April 04
Quiz 1 (**Online Asynchronous**)	7.5 %	Feb 12 at 08:00 – Feb 13 at 18:00
Quiz 2 (**Online Asynchronous**)	7.5 %	Mar 19 at 08:00 – Mar 20 at 18:00
Final Exam (**In-Person**)	35 %	Scheduled by Registrar

Assessment Scheme Automatic Re-Weighting

- **Tutorials:** If your lowest of all five assignment scores is greater than your overall tutorial score, your tutorial score will be replaced by your lowest assignment score.
- **Assignments:** Assignments will be scored best 4 out of 5; the lowest score is automatically dropped OR replaces your tutorial score if it is higher.
- **Quizzes:** Your quiz scores will be automatically replaced by your final exam score if you receive a higher grade on your final exam.
- **Extra Credit:** Currently, no extra credit opportunities are planned for this course and will not be made available by request.

Assignment Submissions

- **Due Dates:** Assignments are due on Fridays at 17:00 (5:00PM). Assignments can be submitted without penalty until Sunday at 23:59 following the Friday due date, but support will not be provided during the weekend and must be submitted to Brightspace prior to this grace period cut-off or else the submission will receive a **zero**. You are still encouraged to have your work reviewed during student hours for feedback.
- **Verify:** It is your responsibility to **download and test** your work after submitting, to verify it meets all requirements (e.g., filenames, allowed functions).
- **Feedback and Disputes:** Assignment grades and feedback will be visible on Brightspace approximately two weeks following the deadline after an announcement is made. After this announcement, you have **one week** to email the TA that graded you to request a re-grade if the assignment was graded incorrectly. If you cannot resolve this with your TA, please contact the lab coordinator.
- **Technical Issues:** Technical issues will **not** constitute accommodations beyond the existing accommodation policies. If you are experiencing computer difficulties preventing access to working on the assignment, you can utilize the computers in the School of Computer Science laboratories. You are expected to start assignments early and submit progress frequently to receive part-marks if there are any issues with submission near the deadline.
- **Misconduct:** Assignments will be automatically reviewed using code review tools and then manually reviewed to detect suspected plagiarism; make sure to read and review the course plagiarism policies carefully.

Quiz Submission

- Classes will be **cancelled** during the dates of the quizzes to provide you with this time to write if desired; questions will not be answered relating to the quiz.
- Quizzes will be written online asynchronously on Brightspace.
- Quizzes are **closed-book**, must be worked on **individually**, and without the use of **AI.**
- Support for content relating to quizzes will not be provided during the period that the quiz is open.
- It is your responsibility to ensure that you have a stable internet connection and at least two up-to-date web browsers installed to deal with any technical issues that might occur.
- It is your responsibility to follow the procedures in the quiz instructions to immediately report any technical issues with the quiz to receive support.
- Reminder that the **final exam is written in-person**.

Late and Missed Work Policies

Late Work

Assignments are automatically extended into the weekend, but will not have additional support provided after the initial deadline. Submissions that are not submitted to Brightspace by this cut-off period will not be accepted. No late penalties will be applied during this automatic extension period.

Missed Work

Short-term (5 days or less): **Assignments and Tutorials:** No extensions or exemptions will be provided for missed assignments. The lowest mark will be automatically dropped. No accommodations are available for a missed tutorial beyond the mark automatically being replaced by your lowest mark assignment. **Quizzes:** Any missed quizzes will be replaced by the final exam mark automatically and no request for accommodations is required. If requested, the quiz can be re-opened for no marks but to help practice and receive feedback within one week of the quiz period by sending an email to the instructor.

Long-term (> 5 days): **Assignments and Tutorials:** If you require a *longer-term accommodation* which prevents work from more than one assignment and multiple tutorials in a row, you may email the instructor as soon as possible to discuss long-term accommodations after reviewing the linked information about long-term accommodations. Accommodations will typically include submitting the missed work after the incapacitation period and receiving a SAT/UNSAT with a SAT allowing the weight of the missed item to be re-distributed to other items. **Quizzes:** The short-term policy applies for quizzes.

Course Modality

This course involves in-class activities, graded quizzes, and discussions, and thus must be **synchronous**, or live-streamed. We will be meeting on Zoom for lectures and tutorials; tutorial software is subject to change.

We will primarily use Brightspace forums for conversations, and you are strongly encouraged to make use of them to chat and discuss with peers. **Why not Discord?** Discord requires a level of moderation we are unfortunately not able to provide. It opens the opportunity for students to be hacked and requires some students to start new accounts with third-party companies. I want to encourage fun, professional, and courteous conversations – but we will keep this to the Brightspace forums for now. I am always open to suggestions to improve the experience and keep the class collaborative.

You are expected to attend **every class**. Class recordings will be posted up to **one week later**, but you may miss out on important in-class activities and discussions and recordings should not be relied upon as a consistent replacement for attendance.

While you are not strictly required to have a camera on, the lecture will be in "Focus Mode", meaning that only the instructor can see your camera and it should not appear in recordings, but technical issues could potentially mean cameras could appear temporarily. You are requested to turn a camera on to help gauge engagement and build familiarity during lectures, and it is **very highly requested** to have a camera on in tutorials to help with group conversations. You **must** have a working microphone to interact with each other. **Please be aware:** if you turn on your camera or speak during lectures (which is both allowed and encouraged), you may appear in the recording that is posted to Brightspace, though camera is unlikely due to the focus mode setup. You are **not** permitted to share these recordings to help maintain privacy.

Please note that by participating in these lectures 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 if the instructor falls ill.

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. Your first point of contact for support about course support or other information should be the Brightspace forums or student hours with TAs and the instructor.

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. Email communication may be delayed if there is a high volume of emails, so any messages which can be answered in the syllabus, recent course announcements, or could be asked on the course forums as it does not require exposing personal information may be low-priority and you are encouraged to attend student hours.

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. As I teach multiple courses, please include **the course code in the subject line.**
2. **Assignment questions** should *first* be dealt with by discussing with a TA during student hours or via the Brightspace forums. If you have concerns about grading and cannot contact your TA, or if you have concerns about the TAs, please contact our lab coordinator.
3. **Course material assistance** can be handled via Brightspace forums, TA student hours, or instructor student 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.

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.

School of Computer Science Laptop Requirement (only applies to on-campus courses)

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/.

Undergraduate Academic Advisors (only for UG course)

The Undergraduate Advisors for the School of Computer Science are available in Room 5302HP; or by email at 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/.

Mental Health and Wellness

Carleton offers a wide range of wellness services that I highly recommend reviewing. Whether it is because you are in a rough place, are having a difficult time keeping up with your studies, or would just like to bolster your skills for mental, physical, or academic well-being, check out the Carleton Wellness Website for information about the services offered. Most are free and confidential. If you ever feel unsafe or are having an emergency on campus, you can contact campus safety from any Carleton phone by dialing 4444 or from your own phone at 613-520-4444. If you would like help navigating supports or would like help connecting with a member of the wellness team who can help identify the resources to help you get through a distressing situation, you can review the resources or reach out to me and I am happy to help connect you with people who can help.

Academic Accommodations and Regulations

Academic Accommodation

Carleton is committed to providing academic accessibility for all individuals. You may need special arrangements to meet your academic obligations during the term. The accommodation request processes are outlined on the Academic Accommodations website (https://students.carleton.ca/course-outline/).

Chat GPT/Generative AI Usage

Generative AI is a new tool which has been shown to be relatively effective at many tasks relating to this course – I am aware of the value these can have in producing work; however, I must stress that the goal here is not to have you producing output, but to **understand**, to **reflect**, to be **adaptable**. Personally, I believe AI can be a helpful tool for learning, but it is very challenging to use in an effective way that does not interfere with learning, particularly in courses teaching foundational information such as this. It is **vital** to your understanding of the material that you build up the **recognition** skills earned by taking time to get stuck in understanding and overcome it; to build up **translation** skills by being the one to compare possible solutions and select the best

ones; to build a **muscle memory** for writing out certain patterns of code in different circumstances to help rapidly recall your tools. Our goal is for you to have an foundational understanding, not a dependence on a specific tool.

As such, use of generative AI – including but not limited to chat based solutions like ChatGPT or code generation tools like GitHub Co-Pilot are **banned** from use for completing assignments. No assignment specification information should be sent to any of these services or run through local AI. Use of a Generative Chat AI such as ChatGPT **is** permitted purely to clarify material, to produce practice exercises to help you with a particular topic, to provide explanations for provided example code; **however,** please be aware that these AI tools are **not** consistently using real information to inform their responses! As such, they can provide very clever and realistic-sounding misinformation which can easily mislead newcomers to the field. As such, if you do choose to use these to help bolster your understanding by generating practice exercises, providing clarifying examples of topics, or re-explaining a topic, it is highly recommended that you follow-up with a teaching assistant or the instructor via the Brightspace forums or during student hours to verify your understanding and make sure you have not received misinformation.

As someone who has taken some time to research AI to help bolster creativity and support learning, I am happy to discuss appropriate ways and techniques to use AI to support your learning in a way that is less likely to hinder your learning experience and hold back your understanding for future courses.

As our understanding of the uses of AI and its relationship to student work and academic Integrity continue to evolve, students are required to discuss their use of AI in any circumstance not described here with the course instructor to ensure it supports the learning goals for the course.

Academic Integrity

Students are expected to uphold the values of academic Integrity, which include fairness, honesty, trust, and responsibility. Examples of actions that compromise these values include but are not limited to plagiarism, accessing unauthorized sites for assignments or tests, unauthorized collaboration on assignments or exams, and using artificial intelligence tools such as ChatGPT when your assessment instructions say it is not permitted. If you are unsure of the expectations regarding academic Integrity (if unauthorized 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. You are NEVER permitted to post, share, or upload course materials without explicit permission from your instructor.

For more information, you are required to review the **plagiarism policy** which will be available on Brightspace prior to the first assessment for more information. Collaboration is not permitted on assignments to make sure that you have your understanding of the material assessed and can receive personal practice and feedback. Quizzes are meant to be completed alone and only with the resources discussed in the quiz instructions.

Misconduct in scholarly activity will not be tolerated and will result in consequences as outlined in Carleton University's Academic Integrity Policy. A list of standard sanctions in the Faculty of Science can be found here.

Additional details about this process can be found on the Faculty of Science Academic Integrity website.

Students are expected to familiarize themselves with and abide by Carleton University's Academic Integrity Policy.

Personal Note on Integrity: The goal of this class is to learn – both for you and for me as the instructor. If there is too much work or if topics are too unclear, this is either a sign that you need a bit of support to catch up or that the course needs some refinement. If students are doing well due to misconduct, I will have little indication that there are issues with the course presentation. It is unfair to students that do not commit misconduct, it is unfair to the teaching team to spend time crafting and assessing materials that are not providing you with feedback on your own progress, and it is unfair to yourself to risk severe academic penalties and to miss out on opportunities to learn and grow and set yourself up for success later in the course and in future terms. If you struggle to complete the material early on and feel unable to progress, **please** know that you are not alone, both in terms of this struggle and in terms of support and come to TA and instructor student hours for support to get on track. If you are struggling with academic skills like retaining information or time management, please explore the wellness services offered by Carleton or reach out to the instructor via student hours for help.

Student Rights & Responsibilities

Students are expected to act responsibly and engage respectfully with other students and members of the Carleton and the broader community. See the 7 Rights and Responsibilities Policy for details regarding the expectations of non-academic behaviour of students. Those who participate with another student in the commission of an infraction of this Policy will also be held liable for their actions.

Student Concerns

If you have any concerns regarding this course, your first point of contact is me. Please email me or visit during my student hours, and I will do my best to address your concerns. If I cannot resolve the issue, the next point of contact is the School of Computer Science at studentconcerns@scs.carleton.ca. If the concern remains unresolved, the final point of contact is the Office of the Dean of Science at ODScience@carleton.ca. Please follow this order of contact.

Note: You can also bring your concerns to Ombuds services.