COMP 1005A/1405A (Fall 2025)

Introduction to Computer Science I

Instructor: Ava McKenney

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Office Location: HP 5171

Best Ways to be in Touch: In class, Discord, or during office hours

Teaching Assistant: A list of teaching assistants and their contact/office hours information will be posted on the course Brightspace page.

Class Location: Please check Carleton Central for the room location.

Lecture Times: Wednesdays 1:05-2:25pm

Tutorial Times: See course Brightspace page.

Course Website: https://brightspace.carleton.ca/

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 additional credit for BIT 1400, CGSC 1005, ECOR 1031, COMP 1405, ECOR 1041, ECOR 1042, ECOR 1051, ECOR 1606, ITEC 1400, ITEC 1401, SYSC 1005.

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

Learning Material	Options for Purchasing *(e.g., Bookstore, Used, etc.)*	Approximate Cost
Python for Everybody	Link for book	Free
Python 3.13	https://www.python.org/	Free
Visual Studio Code	https://code.visualstudio.com/	Free

Students are not required to purchase textbooks or other learning materials for this course.

Topics Covered and Learning Outcomes

Week	Topics	Assigned Readings
1	Course Introduction, Computational Thinking, Problem Solving, Data Representation	Python for Everybody, Chapter 1 (all sections)
2	Introduction to Python, Branching Control Structures, Logical Operators	Python for Everybody, Chapter 2 (all sections) Python for Everybody, Chapter 3 (all except 3.7)
3	Looping Control Structures	Python for Everybody, Chapter 5 (5.1-5.9)
4	File Input and Output	Python for Everybody, Chapter 7 (all except 7.7)
5	Functions and Function Scope	Python for Everybody, Chapter 4 (all sections)
6	Introduction to Linear Collections	Python for Everybody, Chapter 8 (all sections)
7	Multidimensional Linear Collections	None
8	None (Fall Break)	None (Fall Break)
9	Strings	Python for Everybody, Chapter 6 (all sections)
10	Associative Collections	Python for Everybody, Chapter 9 (all sections)
11	Complexity Analysis, Binary Searching	None
12	Sorting	None
13	Recursion	None

If a student successfully engages with all lecture material, completes the recommended practice problems, and regularly participates in supplementary activities, then by the end of this course that student should be able to:

- Use a programming language to write computer programs in the imperative/procedural paradigm
- Explain the difference between designing an algorithm and implementing an algorithm in source code
- Apply different problem-solving heuristics (e.g., divide-and-conquer, abstraction, etc.)
- Explain the following topics and apply them in the design and implementation of computer programs:
    - data types, variable assignment, propositional logic, Boolean values
    - branching, repeating, and nested control structures, “if” statements, “for” and “while” loops
    - one-dimensional and multi-dimensional lists, other collections (i.e., dictionaries)
    - functions and recursion, simulation
- Implement some basic searching and sorting algorithms
- Understand the basics of runtime/memory complexity analysis and identify/discuss trade-offs between different algorithmic solutions

Assessment Scheme

Grade Breakdown

COMPONENT	GRADE VALUE	DATE
Tutorials	10 x 3% each	Assigned weekly
Midterm #1	10%	Friday October 10th, 1:05-2:25pm
Midterm #2	10%	Friday October 31st, 1:05-2:25pm
Midterm #3	10%	Friday November 21st, 1:05-2:25pm
Final Exam	40%	To be scheduled by Exam Services

Please note that tests and examinations in this course will use a remote proctoring service provided by Scheduling and Examination Services. You can find more information at https://carleton.ca/ses/e-proctoring/.

All midterms and the final exam will be closed book. All course work, including the tutorials, midterms, and final exam, must be completed individually and without the use of AI. All code submitted by a student for this course should be written manually by that student alone. No code should be copied from any other source unless permission is explicitly granted by the instructor.

A passing grade (50% or greater) on the final exam is required to pass the course. Any student who receives a grade of less than 50% in the final exam will receive a final grade of F.

Late and Missed Work Policies

Late Work

All tutorials for the course will be due on 11:59pm on the stated deadline day. A 48-hour grace period will be allowed for each tutorial. You may submit your tutorial solutions any time within this 48-hour window without penalty. Beyond this grace period, no further extensions will be possible for any reason. Under extenuating circumstances, if you are seeking additional accommodations (e.g., due to an ongoing medical issue), you may petition the Associate Dean's office. Technical problems do not exempt you from this requirement, so if you wait until the last minute and then have issues with your computer or internet connection, you will still receive a mark of zero.

Missed Work

No accommodations will be made for missed work.

School of Computer Science Laptop Requirement

Every student that has been enrolled in a 1000-level (i.e., first year) course offered 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

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

The Carleton Wellness Website is a useful resource for any students who may be struggling.

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

Students may not use AI for any portion of any graded work within the course. This includes the tutorials, midterms, and final exam.

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 (how to use and cite references, 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. 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/.

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.

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.