

Course Information

Section	Class Date	Class Time	Instructor
COMP 2402 A	MW	1:05 pm - 2:25 pm	Darryl Hill
COMP 2402 B	MW	11:35 am - 12:55 pm	Yanan Mao
COMP 2402 C	TR	1:05 pm - 2:25 pm	Farah Chanchary

Instructor	Office	Email
Darryl Hill	HP 5173	darrylhill@cunet.carleton.ca
Yanan Mao	HP 5270	yananmao@cunet.carleton.ca
Farah Chanchary	HP 5331	farahchanchary@cunet.carleton.ca

Class location: Please check Carleton Central for the room location.
Best ways to be in touch: in class, via email, or during office hours (will be posted)
Course website: https://brightspace.carleton.ca

Important dates and deadlines can be found here: [Dates, Deadlines, and Regulations Registrar's Office](#), including class suspension for fall, winter breaks, and statutory holidays.

Land Acknowledgement: Here at Carleton University, it is important that we acknowledge that the land on which we gather is the traditional and unceded territory of the Algonquin Nation.

Course Description

This course builds upon the principles introduced in COMP 1405 and COMP 1406 and provides a general background for further study in Computer Science. The course will cover object-oriented programming concepts; the design and implementation of data structures (linked lists, stacks, queues, trees, heaps, hash tables, and graphs) and related algorithmic techniques (searching, sorting, recursion); and algorithm analysis. Students will be expected to complete a number of programming projects using the concepts presented.

- Precludes additional credit for Precludes additional credit for SYSC 2100.
- Prerequisite(s): (COMP 1006 or COMP 1406) with a minimum grade of C-.

For all course prerequisites, see the course calendar: calendar.carleton.ca/undergrad/

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

Textbook: Pat Morin's [Open Data Structures](https://opendatastructures.org). Free PDF and HTML versions of the book are available at opendatastructures.org. You'll want the Java version. If you prefer a physical copy, they are available on [Amazon.ca](https://www.amazon.ca).

Brightspace: This platform will be used during the course to share materials, post assignments, weekly updates, etc.

Laptop Requirement (School of Computer Science) :

Every student who 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 the [SCS Laptop Requirement](#) and then review the requirements at [Laptop Specifications](#).

Necessary Software:

There will be a lot of Java programming throughout the course. You will need a Java compiler and your favourite editor. If you do not have Java installed on your computer, you can download it for free from [Oracle Java](https://www.oracle.com/in/java/technologies/javase-downloads.html).

Topics Covered and Learning Outcomes

Topics Covered

Throughout this course, students will explore foundational topics in abstract data types and algorithms, including:

- **Interfaces and Implementation (The Java Collections Framework)**
- **Sequences: lists, stacks, queues, deques**
- **Array-based and linked-list-based implementations of sequences**
- **Unordered sets - hash tables**
- **Ordered sets - balanced search trees, skiplists**
- **Priority queues - heaps**
- **Sorting algorithms**
- **Graphs**
- **Applications of data structures**
- **Performance issues**

Learning outcomes

By the end of this course, students who actively participate in lectures, in-class assessments, quizzes, and assignments will be able to:

- Discuss basic types of data structures, their implementation, application, strengths, and weaknesses.
- Analyze the pros and cons of various solutions to a given problem and decide which code is best for the given situation.
- Design better code (efficient, reliable, fast, and elegant), leading to software that runs faster and consumes less memory.

A detailed breakdown of topics and a tentative calendar are available on the course website.

Assessment Scheme

Your performance in this course is assessed using several components. These include three (3) assignments, weekly in-class assessments, two (2) tests, and one (1) final examination (scheduled by the Registrar's Office). Final grades will be determined using the scheme described below, and no extra credit assignments will be provided.

Grades: Marks will be posted on Brightspace or available on the assignment submission server.

Grade Breakdown

COMPONENT	GRADE VALUE	DUE DATE
Assignments (3)	15 % (5% each)	23:59 on Sundays
Brightspace Quizzes (12)	10% (best 10 of 12)	23:59 on Sundays
In-class Assessments	5%	During class time
Tests (2)	30 % (15% each)	Test 1: TBD by SES between October 16-18 (2h) Test 2: TBD by SES between November 27-29 (2h)
Final Exam (1)	40 %	TBD by Carleton between December 12-23 (2h)

Lectures

Lectures will be given in person. You are strongly encouraged to attend lectures regularly, as we believe in-person learning is a more engaging and effective way to understand the material. Questions pertaining to lectures, quizzes, and general course material can be asked/answered on **Brightspace**. **All relevant course materials, including lecture slides, solutions, and weekly updates, will be posted in Brightspace (after the lectures).**

Assignments

Assignments are mandatory. You will be given instructions on how to submit them. The assignment component of your final grade is computed from the score you receive on each assignment; the lowest assignment will not be "dropped". You are expected to work on your assignments consistently once they are released (uploading your progress at least daily). As a result, you will never be granted an exemption from an assignment, even for a legitimate medical reason.

Late assignments are not accepted. Assignments will be announced and available on Brightspace. Submissions are handled electronically (i.e., through a submission server), and there is **no "grace period"** with respect to a deadline. Once the submission server is taken down at the designated time, the assignment is considered late and will **receive a mark of zero.**

Make sure you submit your assignment ahead of the deadline in case of any tech issues with Brightspace or the submission server. **It is your responsibility to ensure that your solutions are submitted in a readable format before the deadline.**

Brightspace quizzes

Brightspace quizzes will be conducted weekly. To test your understanding of each topic we covered during the lectures, weekly quizzes will be available on Brightspace. Each quiz consists of a small number of topic-specific multiple-choice questions. All quizzes are untimed and will remain accessible for several days. You are **allowed - and encouraged - to make multiple attempts** within the week. Your highest score will be recorded to keep the assessment low-stakes and aligned with the goal of reinforcing learning through repetition. You will need to **submit your quiz** on Brightspace before the associated due dates to get the marks. **There are 12 quizzes total, but your grade will be based on the best 10.** The two lowest quiz grades will be counted as bonus.

In-class Assessments (weekly)

In-class assessments will be conducted randomly during class time. You will be instructed on how to complete them during that lecture. You will **NOT** be permitted to do them remotely. Please bring an internet-ready device.

To help with a better understanding of each lecture's content, random in-person quizzes or online Wooclap questions may be conducted during the lecture. The questions may vary depending on the topic. You are encouraged to attend the lectures as much as you can to avoid missing any activities. You will need to submit your answers before the class ends to receive the marks.

Tests & Final Exam

The test and final exam will take place in person, scheduled by Carleton. Additional details about each test will be posted on Brightspace at least one week in advance. **The test might be scheduled outside of regular class hours and could occur on a Friday evening, Saturday, or Sunday.** A student may be exempt from at most 1 test, in which case the weight of that test (15%) will be transferred to the final exam. If a student misses both tests, 15% will be added to the weight of the final exam to account for the first missed test, and the second missed test will count for 0 marks.

You must achieve at least 40% on the final exam and at least 40% on the tests and final exam combined to pass the course.

Marking Issues:

It is **your responsibility** to ensure that your test, in-class assessment, and assignment marks posted to Brightspace or the submission server are **correct within one week** of the date the marks were released. You must do so within **one week** of the date the marks were released.

First, contact the teaching assistant who graded your work. If you still have a grading dispute, please contact your instructor with the communication history between the student and TA. Note that if your work needs to be regraded by the instructor, the grade may increase or decrease.

After that one week, no further consideration will be offered, and any student requests to correct or revise marks will not be accepted.

Important Considerations:

Students who miss a test for any reason do **NOT** need to submit any type of medical form. The modifications to their final grade outlined in the [Assessment Scheme](#) section will be automatically applied. Furthermore, because assignments and labs are posted well in advance of their due dates, **illness does not excuse a student from completing an assignment**. No provision is made for missed assignments, and no extra credit assignments will be available.

Collaboration Policy

There is absolutely no collaboration allowed for the Exams.

Collaboration on assignments is acceptable but only at the level of discussion. When coding your solutions, please work on your own. If you need help, please contact a TA or your instructor. Posting assignment solutions or partial solutions on discussion boards before the due date and time is also prohibited. Guidance regarding outside sources on [academic integrity](#).

Academic Integrity

If you are unsure of the expectations regarding academic integrity (how to use and cite references, if unauthorized collaboration with lab partners or classmates is permitted), then you must ASK your instructor. Sharing assignment or quiz specifications or posting them online (to sites like Chegg, Course Hero, 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/>

Artificial Intelligence (Copilot, ChatGPT, etc.)

The use of any AI system will be considered academic misconduct.

The exact manner, limits, and expectations of AI use will be explicitly stated. Any use of AI outside of what is explicitly stated is considered academic misconduct. This includes, but is not limited to, chatbots (e.g., ChatGPT, Google Bard, Bing Chat), code generators (e.g., Copilot, Code Llama), research assistants (e.g., Elicit), and image generators (e.g., Stable Diffusion, Dall-E), etc. An exception to the above rule is made for automated grammar and punctuation checking tools (such as Grammarly).

It would be wise to keep in mind the combined weight of the quizzes and final. Quizzes and the final exam will be pencil and paper, and you will be tested on your understanding of these data structures. Those who rely too much on AI are likely to fail.

All quizzes, tests and exams are expected to be completed individually and without electronic aid; any communication or access to electronic devices (e.g. cellphones) during the test will be considered cheating. Use of Smart Glasses (or other similar assistive technologies) before or during a test is strictly prohibited and is considered an academic integrity violation. Even if you have prescription glasses with assistive technologies, you will not be allowed to use them during the test, so please make sure that you have acceptable prescription glasses. The proctor has the right to ask to inspect your glasses before or during the test. In addition, unless authorized with PMC accommodations, you are NOT allowed to use headphones or earbuds during a test. Also, during a test, if you choose to wear a baseball cap, sunglasses or anything else that would prevent a proctor from monitoring where your eyes are focused during the test, you will likely be asked by a proctor to move to a different seat. Lastly, you must submit your test before leaving the classroom, or it won't be graded.

Additional Notes

Doing well in this course is not only about getting a high grade. It means you really understand the material, and you can connect it with what you have learned before and what you will learn in the future. It is normal to feel uncomfortable when learning something new. But if you can try to challenge yourself a little, instead of always looking for answers directly from AI, you will improve much more. **Real understanding comes from your own thinking and effort.**

In addition to the time spent attending lectures, students can **expect to spend at least nine (9) hours per week** on this course. **Students are responsible for all course materials.** Students are responsible for all course materials, including lecture notes and all materials discussed in class and on any of the official discussion boards.

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

Students are asked to pose all questions related to course content using Brightspace. Students must avoid emailing the instructor directly unless the question contains confidential or personal information.

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

Resources

Undergraduate Academic Advisors

The Undergraduate Advisors for the School of Computer Science are available in Room HP5302 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: [Computer Laboratories](#). All SCS computer lab and technical support information can be found at: [Technic Support](#). Technical support staff may be contacted in-person or virtually; see this page for details: [Contact IT Support](#).

Mental Health and Wellness

The [Carleton Wellness Website](#) is a wonderful resource link to include in the course outline for students.

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/>).

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.

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 office 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](#).
