Introduction to Computer Science II

COMP 1006 – Winter 2025

School of Computer Science, Carleton University

Instructor: Mehak Mustafa **Instructor Email**: mehakmustafa@cunet.carleoton.ca

Lecture Times: Tue/Thu 8:35am-9:55am **Location**: https://brightspace.carleton.ca/d2l/home

Course Description

A second course in programming, emphasizing problem-solving and computational thinking in an object-oriented language. Topics include abstraction, mutable data structures, methods, inheritance, polymorphism, recursion, program efficiency, testing, and debugging. The course will feature an experiential learning activity.

Prerequisite(s): COMP 1005 or COMP 1405.
Precludes additional credit for: BIT 2400, BUSI 2402, COMP 1406, ITEC 2400, ITEC 2401, SYSC 2004

Learning Materials

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

Textbook and Resources

- Primary Text: Course slides, Dr. Lanthier's Notes on OOP and Data Structures [https://people.scs.carleton.ca/%7Elanthier/teaching/COMP1406/notes.html]
- Software: [Java IDE, e.g., IntelliJ IDEA]
- Online Resources: Additional material and videos will be provided via Brightspace.

Learning Outcomes

Upon successful completion of COMP 1006/1406, students should be able to:

- Understand and apply the principles of object-oriented programming:
- Abstraction, Encapsulation, Inheritance, and Polymorphism.
- Design and implement efficient solutions to real-world problems using object-oriented design principles.
- Use mutable data structures (e.g., arrays, linked lists, hash maps) to manipulate and store data effectively.

- Solve complex problems using recursion, identifying appropriate use cases for recursive solutions.
- Write robust code by applying systematic testing and debugging strategies.
- Gain an understanding of the Model-View-Controller (MVC) architectural pattern and its application in software development.

Assessment

Assignments – 10 Total	50 %	Weekly assignments
Midterm Exams - 2	20 %	Online In-class exams on Tue Feb 25 & Thur Feb 27
Final Exam	30 %	Date TBA by university

- Assignments: Assignments will involve writing code which must be tested for correctness, efficiency, and style. Assignments will be due every Friday at 11:59pm (No grace period). Accounts for 50% of your total grade.
- Tutorials: TAs will hold office hours where you are welcome to discuss any problems faced in class or Assignments.
- Midterm Exam: Two midterm exams in Week 7, in-class Accounts for 20% of your total grade. The midterm will assess students' understanding of programming concepts covered up to that point.
- Final Exam: (Date TBA) Accounts for 30% of your total grade.
  A comprehensive exam covering all material from the course, including theoretical questions and programming problems.

Important Dates

- Midterm Exam: Week 7 – Tue Feb 25 & Thur Feb 27
- Final Exam: [Date] (Scheduled by the Registrar)
- Assignment Due Dates: Weekly, Fridays at 11:59 pm (No grace period)

For a complete list of academic deadlines, refer to the Carleton University Academic Calendar.

Final Exam

The examination period is April 11-26. This would be an **in-person** exam. Once the date and time for the exam is announced by the University, please make sure you are available to attend this exam.

Attendance and Participation

- Attendance: Students are encouraged to attend lectures to engage with the material and participate in hands-on exercises.
- Participation: Participation in tutorials is not mandatory but encouraged.

Land Acknowledgement

Carleton University acknowledges the location of its campus on the traditional, unceded territories of the Algonquin nation. In doing so, Carleton acknowledges it has a responsibility to the Algonquin people and a responsibility to adhere to Algonquin cultural protocols.

Academic Integrity

All assignments must be completed and submitted individually unless explicitly stated otherwise. Using AI systems like ChatGPT, Google Bard is prohibited and considered academic misconduct unless specified otherwise. However, tools like Grammarly for grammar checks are allowed. Random one-on-one sessions with TAs or instructors may be conducted to verify work. Sharing course materials or posting them on platforms like Chegg or CourseHero is strictly forbidden without explicit instructor approval. Violations will be treated as academic misconduct.

Please review the Carleton University Student Academic Integrity policy. Violations, such as plagiarism and unauthorized collaboration, will not be tolerated. See Academic Integrity for more details. Misconduct in scholarly activity will not be tolerated and will result in consequences as outlined in 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.

Accommodations

Carleton University is committed to providing academic accommodations for students with disabilities. Please refer to the Carleton Academic Accommodation Policy for more information on available accommodations: [https://students.carleton.ca/course-outline/].

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.

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/.