

ITI 1121. Introduction to Computing II (Sections A, B, C)

Tommaso Cesari (Section A), Mehrdad Sabetzadeh (Sections B and C)
tcesari@uottawa.ca, msabetza@uottawa.ca

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Course Web site

- sites.google.com/view/iti1121

We will be using Piazza for class discussions. The system is meant to get you help rapidly and efficiently from classmates, the teaching assistants, and the professors. Documents will also be posted there.

Find our class page at: <https://piazza.com/uottawa.ca/winter2024/iti1121/home>. Please create an account and enroll there as soon as possible from <https://piazza.com/uottawa.ca/winter2024/iti1121>.

Schedule

The first lecture will be held on Monday January 8, 2024 for Sections A and C, and on Wednesday January 10, 2024 for Section B. Laboratories will start that same week with a startup lab to do on your own. Regular, graded labs start on the week of the January 16th. Information about the schedules, tutorials, lecture notes, etc. can be found on the course web site: <https://sites.google.com/view/iti1121>. Lectures are given **in person**.

- **Lectures (Section A):** Monday 16:00-17:20 and Wednesday 14:30-15:50
- **Lectures (Section B):** Wednesday 16:00-17:20 and Friday 14:30-15:50
- **Lectures (Section C):** Monday 11:30-12:50 and Thursday 13:00-14:20
- **Office hours:**
 - Professor Cesari: Thursday 14:00-15:00
 - Professor Sabetzadeh: Monday 13:00-14:00
 - TA office hours will be listed on BrightSpace
- Consult [uOttawa's Course Timetable](#) for the schedule of the laboratory sections.

Course description

Object-oriented programming. Abstraction principles: information hiding and encapsulation. Linked lists, stacks, queues, binary search trees. Iterative and recursive processing of data structures. Virtual machines. Prerequisite: ITI1120, 3 hours of lecture per week, 3 hours of laboratory per week, 3 credits.

Learning objectives

- Further training in programming concepts, particularly object-oriented programming and linked structures
- Thorough treatment of basic data structures (stacks, queues, linked lists, and binary search trees)
- A basic understanding of virtual machines
- A solid foundation for further studies in computer science

Course outline

- Object-oriented programming and encapsulation
- Polymorphism and inheritance
- Polymorphism and interface
- Abstract data type
- Stacks implementations and algorithms
- Virtual machines
- Queues implementations and algorithms
- Linked implementations, linked lists
- Recursive list processing
- Binary search trees

Evaluation of student learning

There will a midterm test, a final examination, as well as four assignments. **The midterm test will be held on:**

[UPDATED!] Saturday March 2nd, 2024 from 17:00 to 19:00.

The four assignments will be announced in class, and posted on BrighSpace. Every assignment counts and constitutes an excellent preparation for the final. The **tentative** due dates for the assignments are:

- Assignment 1: February 2, 2024
- Assignment 2: February 26, 2024
- Assignment 3: March 22, 2024
- Assignment 4: April 12, 2024

Marking scheme

- Assignments = 25 marks
- Laboratories = 10 marks (Note: Labs are automatically graded using our code grader tool.)
- Midterm test = 25 marks
- Final examination = 40 marks

Calculation of your final grade,

1. if (Midterm test + Final examination) < 32.5 then

$$\text{Grade} = \text{Midterm test} \times \frac{40}{25} + \text{Final examination} \times \frac{60}{40}$$

2. else

$$\text{Grade} = \text{Assignments} + \text{Laboratories} + \text{Midterm test} + \text{Final examination}$$

Given a valid reason (e.g. medical) for missing the midterm test, the mark of the final examination will also be used as the mark of the midterm test.

Textbooks

On the course Web site you will find the suggested readings for each lecture:

- E. Koffman and P. Wolfgang (2016) *Data Structures: Abstraction and Design Using Java, 3rd Edition*. Wiley, 684 pages. (ISBN: 978-1-119-18652-6)
- OR E. Koffman and P. Wolfgang (2010) *Data Structures: Abstraction and Design Using Java, Second Edition*. Wiley, 832 pages. (ISBN: 978-0-470-12870-1)

Here is a free textbook that covers most of the material presented in class.

- Java Structures: Data Structures in Java for the Principled Programmer by Duane A. Bailey
- www.cs.williams.edu/~bailey/JavaStructures/Book.html

The following textbook is a short and useful resource.

- Java Precisely, Third Edition by Peter Sestoft. MIT Press, 2016. (ISBN: 978-0-262-52907-5)

Attendance to classes

Class attendance is mandatory. As per academic regulations:

to be admitted to the final examination in a subject, a student must attend a minimum of 80% of classes and must not have more than five unauthorized or unjustified absences in that subject.

Plagiarism

Academic fraud is an act by a student that may result in a false evaluation (including papers, tests, examinations, etc.). It is not tolerated by the University. Any person found guilty of academic fraud will be subject to severe sanctions. Here are some examples of academic fraud:

- Plagiarism or cheating of any kind;
- Present research data that has been falsified;
- Submit a work for which you are not the author, in whole or part;
- Submit the same piece of work for more than one course without the written consent of the professors concerned.
- Please consult [this webpage](#): it contains regulations and tools to help you avoid plagiarism.

An individual who commits or attempts to commit academic fraud, or who is an accomplice, will be penalized. Here are some examples of possible sanctions:

- Receive an “F” for the work or in the course in question;
- Imposition of additional requirements (from 3 to 30 credits) to the program of study;
- Suspension or expulsion from the Faculty.
- You can refer to the regulations on [this webpage](#).

Information sharing and copyright

All documents prepared by the course instructor, including assignments, course notes, and exams, are protected by copyright. Copying, digitizing, or publishing on a Web site is therefore a violation of copyright and is illegal.

Counselling service

There are many reasons to take advantage of the Counselling Service. They offer:

- Personal counselling
- Career counselling
- Study skills counselling

Further information is available [here](#).

Access service

The Access Service acts as an intermediary between students, their faculty, and other University offices to ensure that the special needs of these students are addressed and that the best possible learning conditions are being offered.

Note that the University of Ottawa is affiliated with [AERO](#) and [ACE](#) services for the adaptation of accessible academic materials for students with perceptual disabilities. If you have any questions, please contact the [Accessibility Librarian](#) or check the [Access services](#) for textbooks.

Policy Prevention of sexual violence

The University of Ottawa will not tolerate any act of sexual violence. This includes acts such as rape and sexual harassment, as well as misconduct that take place without consent, which includes cyberbullying. The University, as well as various employees and student groups, offers a variety of services and resources to ensure that all uOttawa community members have access to confidential support and information, and to procedures for reporting an incident or filing a complaint. For more information, please visit <https://www.uottawa.ca/about-us/respect/sexual-violence-support-and-prevention>.