Course Description:
A second course in programming for BCS students, 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.

Instructor: Farah Chanchary (she/her)
Email: farahchanchary@cunet.carleton.ca
Lectures: Wednesday and Friday: 11:35 – 12:55 pm
Location: See Carleton's schedule for the most up-to-date location
E1 - Monday: 11:35 – 12:55 pm
E2 - Tuesday: 11:35 - 12:55 pm

Course Website: all course materials and resources will be available on Brightspace.

Online platform for Q/As: all questions about lectures, tutorials, exams, and course material will be answered on Discord. Sign-up information for our official Discord server can be found on the course website. Students are encouraged to post all course-related questions on the appropriate Discord channel.

Office Hours: all office hours and TAs’ contact information are available on the course website.

Learning Modality:
- Lectures will be synchronous and in person.
- Tutorials will be synchronous and on campus. You must bring a laptop to the tutorials.
- Assignments and weekly quizzes will be asynchronous and submitted online via Brightspace.
- Final exam will be synchronous, on campus.
- Office hours will be a mix of in-person hours on campus and online on our official Discord server.

Recommended Textbook:
This course does not require any official textbook. An online textbook can be found here. Reading material from this textbook will be shared on Brightspace.

Assessment Scheme:
In this course, students will be evaluated according to the following criteria.
<table>
<thead>
<tr>
<th>Criteria</th>
<th>#</th>
<th>Total %</th>
<th>Tentative dates*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quizzes</td>
<td>Best 10 of 11</td>
<td>10%</td>
<td>weekly, beginning the week of Jan 16th, due on Friday at 11:59 pm</td>
</tr>
<tr>
<td>Tutorials</td>
<td>10</td>
<td>30%</td>
<td>weekly, beginning the week of Jan 16th, due on Friday at 11:59 pm</td>
</tr>
<tr>
<td>Assignments + Self-evaluation quizzes</td>
<td>4</td>
<td>40%</td>
<td>Self-evaluation quizzes are associated with assignments, more information will be available on Brightspace later.</td>
</tr>
<tr>
<td>Final</td>
<td>1</td>
<td>20%</td>
<td>scheduled by the Registrar</td>
</tr>
<tr>
<td>Bonus</td>
<td>the remaining weekly quiz score</td>
<td>1%</td>
<td>will be applied at the end of the term</td>
</tr>
</tbody>
</table>

*Dates are subject to change. Announcements will be made in the class and on the course website.

Collaboration is not allowed on any assessment criteria. Assignments, tutorials, quizzes, and the final exam must be completed individually. Discussing assignments, tutorials, and quiz problems are allowed, but students should write their own code without any assistance from others. A few tutorials within the course will cover two topics and have double weight. This will be clearly stated in the tutorial specification and students will have more time to complete a double tutorial.

**Double pass rule:**
The course uses a double-pass rule. A grade of less than 50% on the final exam will result in a grade of F for the course, regardless of grades received on other assessments.

**Software Requirements:**
In this course, we will use Java. You must download the latest JDK from Oracle and be sure to install the JDK and not just the JRE. You may use JDK 17 or higher for this course. Some useful links are here.

Java JDK download  

Java JDK 17 API (Programming Interface) Module Level:  
https://docs.oracle.com/en/java/javase/17/docs/api/java.base/module-summary.html

Java JDK 17 API java.lang classes (most common initial classes we will look at):  

In addition, you would benefit from using an IDE (Integrated Development Environment). You are recommended to download and configure IntelliJ (Community edition) or the IDE of your choice. IDE installation should be a relatively simple process, but it is suggested that configuration problems and advice for IDE’s be posted to the student forum.
Intelij IDEA IDE
https://www.jetbrains.com/idea/

Intelij Getting Started Tutorials:
https://www.jetbrains.com/idea/documentation/

Weekly Quizzes:
Every week a set of practice problems related to the lecture materials will be posted on Brightspace. These questions will test your knowledge of the concepts and advantages of the object-oriented programming language. Two attempts per quiz are allowed. The best 10 scores will be counted. Late attempts will not be allowed.

Tutorials:
Tutorials will be done weekly. To receive full marks, you must submit the completed work on Brightspace by end of the deadlines. No late tutorials will be accepted.

Assignments:
All assignments will be made available in Brightspace and you will use Brightspace to submit your assignments. All assignment submissions must be your individual and original work (see the Plagiarism section below).

Assignment submission: multiple submissions are allowed before the due date. You are expected to work on your assignments consistently once they are released (uploading your progress periodically). As a result, the instructor does not grant exemptions for the assignments due to sudden sickness, or any technical problems such as problems regarding internet connectivity or computer hardware and/or software. No provision is made for missed assignments, and no extra credit assignments will be available. Therefore, you are advised to:

- periodically upload your progress (i.e., upload your progress at least daily).
- attempt to submit your final submission at least one hour in advance of the due date and time.

For each assignment, you will be submitting one or more files that contain source code, and these files must be given the correct filename and provided in the specified format. Assignments that are incorrectly named or in the incorrect format will be penalized and may receive a zero (0) mark.

If any of the source code files you submit does not run, it will receive a zero mark. Consequently, after you upload your submission to Brightspace you must re-download it immediately and ensure that:

- your submission is a "zip" file that is not corrupt (i.e., it can be opened properly).
- each of your source code files can be run from an IDE or command line without error.
- each of your source code files can be viewed in a text editor (for marking purposes).
- your submission and each of your source code files follow the proper naming scheme.

You are expected to demonstrate good programming practices at all times, and your code may be penalized if it is poorly written.
**Late policies:** all tutorials and assignments for the course will be due on Fridays at 11:59 pm. A 48-hour grace period will be allowed for each submission. You may submit your tutorial/assignment solutions at any time within this 48-hour window without penalty. Beyond this grace period, no further extensions will be possible for any reason.

**Final Exam**
The time and the format of the final exam will be announced later in the term. The registrar's office will schedule the exam time and more information can be found on their website close to the exam time. The deferral process for formally scheduled exams is handled through the registrar's office as well, see the registrar's website for more details.

**Grading and Appeal:**
All assignments, tutorials, and the midterm submitted through Brightspace will be graded by the TAs. Practice problems will be auto-graded. It is your responsibility to ensure that your marks (assignments, tutorials, tests, practice problems) published in Brightspace are correct within seven (7) working days of the date the marks were released. Concerns or complaints about the grading must be communicated first to the TA who marked your work, then, if the result is unsatisfactory, to the instructor within that time. After those five days, all marks are considered final and will not be changed under any circumstances.

**Bonus:** the remaining weekly quiz score, if completed, will be used as a bonus point. This is completely optional; not doing the bonus point will not negatively impact your final grade.

**Learning Outcomes:**
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:
- Implement computer programs using the object-oriented programming paradigm and the Java programming language
- Understand and effectively apply the key principles of object-oriented programming: encapsulation, abstraction, inheritance, and polymorphism
- Understand the basic memory model of Java programs
- Solve problems using a recursive approach
- Work with abstract data types to solve problems
- Apply exception handling to build fault-tolerant programs

**Additional Notes**
In addition to the time spent reading/viewing lecture materials and completing tutorials, students can expect to spend at least ten (10) hours per week on this course. Students are responsible for all course materials, including lecture notes, tutorial exercises, and all materials discussed in class and on any of the official discussion forums.
Students are asked to pose all questions related to course content using the official discussion boards on Discord; students should not email the instructor directly unless the question contains confidential information or is of a personal nature.

The instructor will attempt to answer every student email received within two (2) working days of the time the message was received unless the email requests information already posted on Brightspace, Discord, or in this course outline. To ensure that all announcements are received, students are expected to check their email on a daily basis.

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

**Plagiarism Policy:**
Any student that violates academic integrity (intentionally or not) must be reported to the Associate Dean (Undergraduate) who will investigate the matter. Penalties for such offences can be found on the ODS webpage.

There is a separate plagiarism policy document for this course that is located on Brightspace. Students must read this document thoroughly and must agree to adhere to this policy (and to all policies stated in this course outline) before the assignment resources will be made available.

If you are still unsure of the expectations regarding academic integrity (how to use and cite references, how much collaboration with lab or classmates is appropriate), you are invited to discuss any concerns with the instructor at the earliest opportunity.

**Undergraduate Academic Advisor**
The Undergraduate Advisor for the School of Computer Science is available in Room 5302C HP; 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.

--------------------------------------------- University Policies ---------------------------------------------

For information about Carleton’s academic year, including registration and withdrawal dates, see Carleton’s Academic Calendar.

**Pregnancy Obligation.** Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, visit Equity Services.
Religious Obligation. Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, visit Equity Services.

Academic Accommodations for Students with Disabilities If you have a documented disability requiring academic accommodations in this course, please contact the Paul Menton Centre for Students with Disabilities (PMC) at 613-520-6608 or pmc@carleton.ca for a formal evaluation or contact your PMC coordinator to send your instructor your Letter of Accommodation at the beginning of the term. You must also contact the PMC no later than two weeks before the first in-class scheduled test or exam requiring accommodation (if applicable). After requesting accommodation from PMC, meet with your instructor as soon as possible to ensure accommodation arrangements are made. For more details, visit the Paul Menton Centre website.

Survivors of Sexual Violence. As a community, Carleton University is committed to maintaining a positive learning, working and living environment where sexual violence will not be tolerated, and survivors are supported through academic accommodations as per Carleton's Sexual Violence Policy. For more information about the services available at the university and to obtain information about sexual violence and/or support, visit: carleton.ca/sexual-violence-support

Accommodation for Student Activities. Carleton University recognizes the substantial benefits, both to the individual student and for the university, that result from a student participating in activities beyond the classroom experience. Reasonable accommodation must be provided to students who compete or perform at the national or international level. Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, see the policy.

Student Academic Integrity Policy. Every student should be familiar with the Carleton University student academic integrity policy. A student found in violation of academic integrity standards may be awarded penalties which range from a reprimand to receiving a grade of F in the course or even being expelled from the program or University. Examples of punishable offences include: plagiarism and unauthorized co-operation or collaboration. Information on this policy may be found here.

Plagiarism. As defined by Senate, "plagiarism is presenting, whether intentional or not, the ideas, expression of ideas or work of others as one’s own". Such reported offences will be reviewed by the office of the Dean of Science. Standard penalty guidelines can be found here.

Unauthorized Co-operation or Collaboration. Senate policy states that "to ensure fairness and equity in assessment of term work, students shall not co-operate or collaborate in the completion of an academic assignment, in whole or in part, when the instructor has indicated that the assignment is to be completed on an individual basis". Please refer to the course outline statement or the instructor concerning this issue.

Information for Pandemic Measures: It is important to remember that COVID is still present in Ottawa. The situation can change at any time and the risks of new variants and outbreaks are very real. There are a number of actions you can take to lower your risk and the risk you pose to those around you including being vaccinated, wearing a mask, staying
home when you're sick, washing your hands and maintaining proper respiratory and cough etiquette.

**Feeling sick?** Remaining vigilant and not attending work or school when sick or with symptoms is critically important. If you feel ill or exhibit COVID-19 symptoms do not come to class or campus. If you feel ill or exhibit symptoms while on campus or in class, please leave campus immediately. In all situations, you must follow Carleton’s [symptom reporting protocols](#).

**Masks:** On the recommendation of Ottawa Public Health, Carleton will be maintaining the mandatory [COVID-19 Mask Policy](#) until further notice. The policy requires masks to be worn in all university buildings, including offices, classrooms and labs.

**Vaccines:** Further, while proof of vaccination is no longer required as of May 1 to attend campus or in-person activity, it may become necessary for the University to bring back proof of vaccination requirements on short notice if the situation and public health advice changes. Students are strongly encouraged to get a full course of vaccination, including booster doses as soon as they are eligible, and submit their booster dose information in [cuScreen](#) as soon as possible. Please note that Carleton cannot guarantee that it will be able to offer virtual or hybrid learning options for those who are unable to attend the campus.

All members of the Carleton community are required to follow requirements and guidelines regarding health and safety which may change from time to time. For the most recent information about Carleton’s COVID-19 response and health and safety requirements please see the [University’s COVID-19 website](#) and review the [Frequently Asked Questions (FAQs)](#). Should you have additional questions after reviewing, please contact covidinfo@carleton.ca.