Course Outline

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.

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

Instructor:
Farah Chanchary (email: farahchanchary@cunet.carleton.ca)

Course Information:
This is an online course with both synchronous and asynchronous components.

- **Asynchronous:** recorded lectures and slides will be posted on culearn course webpage at the beginning of each week.
- **Synchronous:** all tutorial sessions will be live, and student’s attendance is mandatory. In addition, we will have online meetings on some weeks during the lecture hours (first meeting on July 02, Thursday). Details about these meetings will be posted on culearn webpage well in advance.
- **Course Website:** [https://culearn.carleton.ca/moodle/course/view.php?id=152650](https://culearn.carleton.ca/moodle/course/view.php?id=152650)
- **Instructor’s Online Office Hours:** Tuesdays and Thursdays, 6:00 - 7:30pm. or by appointment.
- **TA’s Online Office Hours:** TA’s office hours and contact information are available on the course webpage.
- **Discord and Student Forum:** All questions pertaining to lectures, tutorials, general course material and exams will be answered on Discord. Students are also encouraged to use the Student Forum on the course webpage to ask any general course related questions.
Recommended Textbooks:
We do not have any required textbooks in this course. Useful notes and books may be found online using the links below:

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 13 or higher for this course. Some useful links are here.

Java JDK download

Java JDK 13 API (Programming Interface) Module Level:
https://docs.oracle.com/en/java/javase/13/docs/api/java.base/module-summary.html

Java JDK 13 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.

IntelliJ IDEA IDE
https://www.jetbrains.com/idea/

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

Assessment Scheme:
Students will be evaluated according to the following criteria with a double pass rule.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Frequency</th>
<th>Weight</th>
<th>Comments*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tutorials</td>
<td>10</td>
<td>10 x 1 = 10%</td>
<td>All 10 will be counted (every week during the session you are registered in)</td>
</tr>
<tr>
<td>Assignments</td>
<td>5</td>
<td>5 x 10 = 50%</td>
<td>All 5 will be counted (for due dates, see the course calendar)</td>
</tr>
<tr>
<td>Midterm</td>
<td>1</td>
<td>1 x 15 = 15%</td>
<td>See the course calendar for tentative date and time</td>
</tr>
<tr>
<td>Final</td>
<td>1</td>
<td>1 x 25 = 25%</td>
<td>Date will be decided by the Registrar office</td>
</tr>
</tbody>
</table>

*Dates are subject to change. Announcements will be made on the course website.
The course uses a double pass rule (Group1 – tutorials and assignments, Group2 - midterm and final). There will be no exceptions. In order to pass the course, you must pass Group2 component (midterm and final). The combined weight of Group2 is 40% of your final grade. If you receive less than 20 out of 40 for this component, then your final grade will be an F. If you receive 20 or more out of 40 then your final grade will be determined using the marking breakdown shown in the table above.

**Tutorials:**
Attendance is mandatory. You must attend the tutorial session in which you are registered. You must submit your completed work on culearn during your own scheduled tutorials. In order to receive full marks, you must complete the work and demonstrate your understanding of the topic if asked by a TA before the end of the tutorial. No late tutorials will be accepted.

**Midterm:**
Midterm is mandatory and will be conducted online. Midterm will be held during the lecture time. You must attend, write, and submit your test immediately upon completion in order to be graded. If you are unable to attend the midterm due to extenuating circumstances, you must inform the instructor via email before the test begins. There will be no make-up midterm but students who receive accommodations will have the weight of the missed midterm moved to the final exam.

You should contact the marking TA within 5 days of the dates the marks are released to resolve your concerns or questions. After this time absolutely no remarking will be done.

**Assignments:**
Assignments are mandatory. All assignments will be made available on culearn and you will use cuLearn to submit your assignments. The assignment component of your final grade is computed from the score you receive on five (5) assignments. All assignments submissions must be your own individual and original work (see Plagiarism section below.)

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, for example, problems regarding internet connectivity or computer hardware and/or software. So, if you wait until the last minute and then have issues with your connection, you will still receive a mark of zero. No provision is made for missed assignments, and no extra credit assignments will be available. Consequently, you are advised to:

- periodically upload you 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

**Late assignments are accepted for 4 hours after the posted deadline, but they incur a penalty of (five) 5% / hour.** Assignment submissions are handled electronically, so there is no "grace period" with respect to the deadline - 4 hours after the official submission deadline, you will not be able to submit your work.
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 be provided in the specified format. Assignments that are incorrectly named or in the incorrect format will be penalized and may receive a mark of zero.

If any of the source code files you submit does not run it will receive a mark of zero. Consequently, after you upload your submission to cuLearn 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. You are also expected to do the necessary preparatory work (i.e., devising an algorithm) before you start coding. You may be asked to present either pseudocode or a flowchart before you will receive any assistance from the instructor or a teaching assistant.

Grading and Appeal:
All assignments submitted through cuLearn will be graded by the TAs. It is your responsibility to ensure that your test, tutorial, and assignment marks posted to cuLearn are correct within five (5) days of the date the marks were released. Concerns or complaints about the grading must be communicated first to the marking TA, 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.

Final Exam:
The time and the format of the final exam will be announced later in the term. Attendance of this exam is mandatory. The exam period can be found at http://carleton.ca/registrar/registration/dates-and-deadlines/. The deferral process for formally scheduled exams is handled through the registrar’s office, see the registrar’s website for more details.

Additional Notes:
In addition to the time spent reading 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 boards.

Students are asked to pose all questions related to course content using the official discussion boards on cuLearn; 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) business days** of the time the message was received, unless the email requests information already posted on cuLearn or in the 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, 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 in whole, without the written consent of the instructor, is strictly prohibited.

**Online Student Success Module:**
This module has been designed to introduce the students to online learning and provide them with strategies and resources to help them successfully navigate this learning experience. It is brought to the students in collaboration with Carleton’s Centre for Student Academic Support (CSAS) and Teaching and Learning Services (TLS).

The module covers the main features, benefits and challenges of online learning and explores various tips, including how to effectively manage time, how to optimize the learning space, how to interact and engage online, and where to seek additional supports.

[https://carleton.ca/online/online-student-success-module/](https://carleton.ca/online/online-student-success-module/)

**Plagiarism Policy:**
There is a separate plagiarism policy document for this course that is located on cuLearn. 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.

**Academic Integrity: Minimum penalties for offences starting 6 January 2020**

- First offence, first-year students (< 4.0 cr): Final grade reduction of one full grade (e.g., A- becomes a B-, if that results in an F, so be it)
- First offence (everyone else): F in the course
- Second offence: One-year suspension from program
- Third offence: Expulsion from the University

**Note:** these are minimum penalties. More-severe penalties will be applied in cases of egregious offences (e.g., a first-year student accessing CULearn from their phone during an exam will be given an F in the course; bribing a faculty member for a better grade would be grounds for suspension, etc.)

**Students 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, by telephone at 520-2600, ext. 4364 or by email at undergraduate_advisor@scs.carleton.ca. The undergraduate advisor can assist with information about prerequisites and preclusions, course substitutions or equivalencies, understanding your academic audit and the remaining requirements for graduation. The undergraduate advisor will also refer students to appropriate resources such as the Science Student Success Centre, Learning Support Services and the Writing Tutorial Services.

You must also read:
http://calendar.carleton.ca/undergrad/regulations/academicregulationsoftheuniversity/

University Policies

Requests for Academic Accommodation
You may need special arrangements to meet your academic obligations during the term. For an accommodation request, the processes are as follows:

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 the Equity Services website:

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 the Equity Services website:

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.
https://carleton.ca/pmc

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 is 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: https://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 information on academic accommodation, please contact the departmental administrator or visit: https://students.carleton.ca/course-outline