CSC115: Fundamentals of Programming: II

Course Dates

CRN(s):	Section A01 CRN: 30183
	Section A02 CRN: 30184
Term:	Summer 2022
Course Start:	2022-05-04
Course End:	2022-08-17
Withdrawal with 100% reduction of tuition fees:	2022-05-16
Withdrawal with 50% reduction of tuition fees:	2022-06-05
Last day for withdrawal (no fees returned):	2022-06-29

Scheduled Meeting Times (M=Mon, T=Tue, W=Wed, R=Thu, F=Fri)

Section:	Location:	Classes Start:	Classes End:	Days of week:	Hours of day:	Instructor:
A01	ECS 123	2022-05-04	2022-07-29	MR	13:00-14:20	Celina Berg
A02	ECS 123	2022-05-04	2022-07-29	MR	13:00-14:20	Celina Berg
B01	ECS 258	2022-05-09	2022-07-29	T	12:30-14:20	
B02	ECS 258	2022-05-09	2022-07-29	W	08:30-10:20	
B03	ECS 258	2022-05-09	2022-07-29	W	12:30-14:20	
B04	ECS 258	2022-05-09	2022-07-29	R	08:30-10:20	
B05	ECS 258	2022-05-09	2022-07-29	R	10:30-12:20	

Instructor(s)

Name: **Celina Berg**
Office: ECS 618
Phone: (250) 472-4818
Email: celinag at uvic dot ca

Office Hours:		Comments
Mon	03:30pm-05:00pm	To begin May 6, 2022. In-person office hours held in ECS 253.
Wed	11:00am-12:30pm	To begin May 6, 2022. Online office hours to be hosted online using Zoom: https://uvic.zoom.us/j/83014117872?pwd=d040aFFuMGw0OEdRZEN0RVhnbnJyQT09
Thu	02:30pm-04:00pm	To begin May 6, 2022. In-person office hours held in ECS 253.
Fri	02:30pm-03:30pm	To begin May 6, 2022. Online office hours to be hosted online using Zoom: https://uvic.zoom.us/j/83014117872?pwd=d040aFFuMGw0OEdRZEN0RVhnbnJyQT09

Course Enrolment Expectations

Students should expect that course experience offered by this in-person course will leverage face-to-face teaching methods augmented with video content.

All course activities (such as lecture, lab assistance, and exams) will require synchronous, in-person participation (i.e., at the scheduled time). Students should plan to attend all course components. Courses will not be able to accommodate personal scheduling issues including work, travel or other commitments.

The university and the Faculty of Engineering has strong mandate to support Equity, Diversity and Inclusion
https://www.uvic.ca/engineering/about/equity/index.php
We as a teaching team will do what we can to create a positive, safe and supportive environment for you to participate in all components of this course offering. I as the instructor appreciate all feedback from you and ask that you feel free to email me to voice concerns or to arrange a time to discuss in-person.
We expect you to be respectful of other students: participate by providing input and asking questions using inclusive language and behaviour and listen actively while others are speaking.

Strict monitoring of academic integrity will be performed in this course for any work submitted for marks. See course component descriptions and Course Policies and Guidelines below for details on academic integrity expectations. Substantiated academic integrity violations will be referred to the Department's Academic Integrity Committee which will determine penalty and ensure a record of the violation is kept with the university.

Course Objectives and Learning Outcomes

This course will:

- introduce two fundamental programming concepts: abstract data types and recursion;
- examine and apply these concepts within the context of an object-oriented approach to programming;
- introduce techniques for reasoning about the efficiency of algorithms and data structures;
- study foundational approaches to organizing data and computations.

Upon successful completion of the course, students will have:

- an understanding of how to use a modern object-oriented programming language to define and manipulate lists, stacks, queues, trees and tables of data;
- an appreciation of why it is important to use abstraction and encapsulation in the design of programs;
- the ability to recognize when a particular choice of data structure is appropriate or ill-advised by reasoning about its efficiency in relation to a problem domain;
- the ability to uncover and reason about repetitive aspects of a computing problem, and to develop appropriate recursive or iterative solutions;
- the ability to understand the specification of a program and its implementation as separate, but related design problems.

Topics

The course will cover the following topics:

- A review of programming in Java
- The design, definition and manipulation of simple data objects
- The implementation of lists, including both sequential (linked) and random access (array) variations
- The implementation of stacks, queues, binary trees, and hash tables; with applications
- An introduction to polymorphism: class hierarchies, interfaces, and generic types
- Problem decomposition using recursion and divide-and-conquer strategies
- Techniques for describing the time and space requirements of data structures and their operations
- The efficiency of common searching and sorting approaches

Textbook

Optional: *Data Abstraction and Problem Solving with Java: Walls and Mirrors (3rd Ed.),* by Frank M. Carrano and Janet J. Prichard, Addison-Wesley, 2005.

Recommended: Any introductory Java text.

Assignments

There will be **10** programming assignments which, together, will comprise **24%** of the total course mark.
This schedule is subject to change. Please consult the course webpage for accurate due dates.

Assignment	Tentative Due Dates
Assignment 1	May 11
Assignment 2	May 15

Assignment	Tentative Due Dates
Assignment 3	May 22
Assignment 4	May 29
Assignment 5	Jun 5
Assignment 6	Jun 12
Assignment 7	Jul 3
Assignment 8	Jul 10
Assignment 9	Jul 17
Assignment 10	Jul 24

We will do spot-check grading in this course. That is, all assignments are graded BUT only a subset of your code might be graded. You will not know which portions of the code will be graded, so all of your code must be complete and adhere to specifications to recieve marks.

Late Assignments will not be accepted.

Plagiarism detection software will be used on assignment submissions. Submitting the work of others and enabling others to submit work based on your work are considered serious academic offences and may result in failure of the course. You cannot share your work with others, either directly or indirectly by placing it in a publicly accessible location (such as Github).

You are encouraged to discuss high-level aspects of the assignment with your peers, and to collaborate on the conceptual aspects of the solution. However, pseudocode and final implementation for an assignment submission must be generated independently, and you will only receive credit for your own work. Do not look at the code written by any other student (sharing solutions electronically, visually, orally or by any other means is prohibited).

We encourage you to augment your learning with external resources (e.g., textbooks, educational Websites, forums, etc.). However, you can use these resources only for learning about the problem high-level solution strategies. You must develop your concrete solution independently.

The use of an editor or tutor, either paid or unpaid, to correct or augment your work is strictly prohibited.

Labs

There will be **10** labs of equal weight which, together, will comprise **10%** of the total course mark.
See the course syllabus on BrightSpace for the lab schedule.

Labs will consist of a set of exercises that will be evaluated in two ways:

- automated tests
- manual inspection for code quality
  Lab exercises will be posted on **Monday** of each week and must be submitted by **end of day Thursday**.

We will do spot-check grading in this course. That is, all lab submissions are graded BUT only a subset of your code might be graded. You will not know which portions of the code will be graded, so all of your code must be complete and adhere to specifications to recieve marks.

Late lab submissions will not be accepted.

Plagiarism detection software will be used on lab submissions. Submitting the work of others and enabling others to submit work based on your work are considered serious academic offences and may result in failure of the course. You cannot share your work with others, either directly or indirectly by placing it in a publicly accessible location (such as Github, GoogleDocs, Discord, etc).

You are encouraged to elicit help from your TA during your allocated lab time. Do not look at the code written by any other student (sharing solutions electronically, visually, orally or by any other means is prohibited). Final lab submissions must be generated independently and you will only receive credit for your own work.

We encourage you to augment your learning with external resources (e.g., textbooks, educational Websites, forums, etc.). However, you can use these resources only for learning about the problem high-level solution strategies. You must develop your concrete solution independently.

The use of an editor or tutor, either paid or unpaid, to correct or augment your work is strictly prohibited.

Exams

In this course there will be three midterm exams (worth **30%** of the course grade) and one final exam (worth **30%** of the course grade).
The midterm exams will be written in person, on paper during the scheduled date during lecture time.

This schedule is subject to change. Please consult the course webpage for accurate due dates.

Exam	Weight	Tentative Exam Dates
Midterm 1	10%	June 2
Midterm 2	10%	June 27
Midterm 3	10%	July 28
Final Exam	30%	to be scheduled by the university

The final exam will be scheduled by the University during the usual exam period.
Students are strongly advised not to make plans for travel or employment during the final exam period or scheduled midterms since special arrangements will not be made for examinations that may conflict with such plans.

Missed exams:
A missed exam will be given a zero grade.
Accommodation for a missed exam is granted in extenuating circumstances (ie. illness) **only if** the following is provided to the instructor:

- notification by email (celinag@uvic.ca) **before the date/time of the exam**
- documentation to support the extenuating circumstances

Accommodation cannot be granted for more than one missed exam.

Collaboration with other students in any form and the solicitation of answers from any outside source (electronically, visually, orally or by any other means) is strictly prohibited. Any instance of impersonation during an exam is considered a serious academic offence by both the student being impersonated and the impersonator.

Exam performance can be verified using an oral exam component if the instructor deems necessary.

Lecture

Prelecture Work
There will be mandatory prelecture work that will comprise **6%** of the total course mark.

The prelecture work will require you to work through a set of lecture material provided in condensed slide form and augmented with video explanations. A quiz will assess your comprehesion of this material. This work is to be completed and submitted on your own but we encourage you to use office hours and the forum to clarify concepts. Working with a classmate to explain concepts to each other can help to solidify understanding.

This prelecture content will be posted before each lecture on BrightSpace and must be completed **before** the associated lecture.
Late submissions will not be accepted.

Lectures
Lectures will be held in-person and will be run in an active-learning format described below.

What you can expect in a lecture

- you will be given problems based on prelecture material
- you will be given time to work through problems on your own or in a group
- problem solving will be demonstrated by your instructor
- the instructor will elicit solutions/suggestions from students in the demonstration of solutions
- students are encouraged to comment and ask clarification questions

Grading

Coursework	Weight
Assignments	24%
Labs	10%
Midterm Exams	30%
Prelecture work	6%
Final Exam	30%

In order to pass the course, students must (a) obtain a **passing grade on the weighted average of your midterm scores**; and (b) obtain a **passing grade on the final exam**.

Regrade policy

At times, you may feel that marks were unfairly deducted during an assignment, lab or exam. In this situation, you can submit your work for a regrade.

We will only take regrades if they are submitted within 7 days of the marks for that assessment being released.
Also note that we reserve the right to regrade the entirety of any submission. When requesting a regrade, your old grade will be removed and your new grade could be higher or lower.
Instructions for regrade requests will be given with the grade release annoucement.

Grading System

The University of Victoria follows a percentage grading system in which the instructor will submit grades in percentages. The University will use the following Senate approved standardized grading scale to assign letter grades. Both the percentage mark and the letter grade will be recorded on the academic record and transcripts.

F	D	C	C+	B-	B	B+	A-	A	A+
0-49	50-59	60-64	65-69	70-72	73-76	77-79	80-84	85-89	90-100

Grades	Description
A+, A, A-	**Exceptional**, **outstanding** or **excellent** performance. Normally achieved by a minority of students. These grades indicate a student who is *self-initiating*, *exceeds expectation* and has an *insightful* grasp of the subject matter.
B+, B, B-	**Very good**, **good** or **solid** performance. Normally achieved by the largest number of students. These grades indicate a *good* grasp of the subject matter or *excellent grasp in one area balanced with satisfactory grasp in the other areas*.
C+, C	**Satisfactory**, or **minimally satisfactory**. These grades indicate a *satisfactory performance and knowledge* of the subject matter.
D	**Marginal Performance**. A student receiving this grade demonstrated a *superficial grasp* of the subject matter.
F	**Unsatisfactory performance**. Wrote final examination and completed course requirements; no supplemental.

Posting of Grades

Typically marks for assignments, examinations, and provisional final grades, are made available through a Learning Management System (LMS) like Brightspace, where each student will be able to view only their own grades. Sometimes numerical marks/grades may be posted publicly to the entire class. In that case, full student numbers or names will not be included with the posted information.

Course Experience Survey (CES)

I value your feedback on this course. Towards the end of term you will have the opportunity to complete a confidential course experience survey (CES) regarding your learning experience. The survey is vital to providing feedback to me regarding the course and my teaching, as well as to help the department improve the overall program for students in the future. When it is time for you to complete the survey, you will receive an email inviting you to do so. If you do not receive an email invitation, you can go directly to the CES site

You will need to use your UVic NetLink ID to access the survey, which can be done on your laptop, tablet or mobile device. I will remind you closer to the time, but please be thinking about this important activity, especially the following three questions, during the course.

- What strengths did your instructor demonstrate that helped you learn in this course?
- Please provide specific suggestions as to how the instructor could have helped you learn more effectively.
- Please provide specific suggestions as to how this course could be improved.

Csc Student Groups

The Computer Science Course Union (https://onlineacademiccommunity.uvic.ca/cscu/) serves all students who are either in a computer science program or taking a class in computer science. Please sign yourself up on their mailing list if you would like to be informed about their social events and services.

The Engineering Students' Society (ESS) serves all students registered in an Engineering degree program, including Software Engineering (BSEng). For information on ESS activities, events and services navigate to http://www.engr.uvic.ca/~ess .

Course Policies And Guidelines

Late Assignments: No late assignments will be accepted unless prior arrangements have been made with the instructor **at least 48 hours before** the assignment due date.
Coursework Mark Appeals: All marks must be appealed **within 7 days** of the mark being posted.
Attendance: We expect students attend all lectures and labs. It is entirely the students' responsibility to recover any information or announcements presented in lectures from which they were absent.
Electronic devices in labs and lectures: No unauthorized *audio* or *video* recording of lectures is permitted.
Electronic devices in midterms and exams: Calculators are only permitted for examinations and tests if explicitly authorized and the type of calculator permitted may be restricted. No other electronic devices (e.g. cell phones, pagers, PDA, etc.) may be used during examinations or tests *unless explicitly authorized*.
Plagiarism: Submitted work may be checked using plagiarism detection software. Cheating, plagiarism and other forms of academic fraud are taken very seriously by both the University and the Department. You should consult the link given below for the UVic policy on academic integrity. Note that the university policy includes the statement that "A largely or fully plagiarized assignment should result in a grade of F for the course."

The Faculty of Engineering and Computer Science Standards for Professional Behaviour are at
https://www.uvic.ca/engineering/assets/docs/professional-behaviour.pdf
U.Vic guidelines and policy concerning fraud and academic integrity are at
http://web.uvic.ca/calendar/undergrad/info/regulations/academic-integrity.html
U. Vic Privacy Policy: If any student has concerns about their private information being stored or accessed outside of Canada, they are required to inform the course instructor about their concerns before the end of second week of classes.

Equality

This course aims to provide equal opportunities and access for all students to enjoy the benefits and privileges of the class and its curriculum and to meet the syllabus requirements. Reasonable and appropriate accommodation will be made available to students with documented disabilities (physical, mental, learning) in order to give them the opportunity to successfully meet the essential requirements of the course. The accommodation will not alter academic standards or learning outcomes, although the student may be allowed to demonstrate knowledge and skills in a different way. It is not necessary for you to reveal your disability and/or confidential medical information to the course instructor. If you believe that you may require accommodation, the course instructor can provide you with information about confidential resources on campus that can assist you in arranging for appropriate accommodation. Alternatively, you may want to contact the Centre for Accessible Learning located in the Campus Services Building.

The University of Victoria is committed to promoting, providing, and protecting a positive, and supportive and safe learning and working environment for all its members.

Copyright Statement

All course content and materials are made available by instructors for educational purposes and for the exclusive use of students registered in their class. The material is protected under copyright law, even if not marked with a ©. Any further use or distribution of materials to others requires the written permission of the instructor, except under fair dealing or another exception in the Copyright Act. Violations may result in disciplinary action under the Resolution of Non-Academic Misconduct Allegations policy (AC1300).