CSC111: Fundamentals of Programming with Engineering Applications

Course Dates

CRN(s):	Section A01 CRN: 20656 Section A02 CRN: 20657
Term:	Spring 2020
Course Start:	2020-01-06
Course End:	2020-04-24
Withdrawal with 100% reduction of tuition fees:	2020-01-19
Withdrawal with 50% reduction of tuition fees:	2020-02-09
Last day for withdrawal (no fees returned):	2020-02-29

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 116	2020-01-06	2020-04-03	MR	08:30-09:50	Celina Berg
A02	ECS 116	2020-01-06	2020-04-03	MR	08:30-09:50	Celina Berg
B01	ECS 242	2020-01-13	2020-04-03	T	09:30-11:20	
B02	ECS 242	2020-01-13	2020-04-03	T	12:30-14:20	
B03	ECS 242	2020-01-13	2020-04-03	W	09:30-11:20	
B04	ECS 242	2020-01-13	2020-04-03	R	11:30-13:20	

Instructor(s)

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

Office Hours:		Comments
Mon	02:30pm-03:30pm	held in ECS 253
Wed	04:00pm-05:00pm	held in ECS 253
Thu	04:00pm-05:00pm	held in ECS 253
Fri	10:00am-11:00am	held in ECS 253

Course Overview

CSC 111 is an introduction to computational problem solving and computer programming, with a particular emphasis on applications to engineering problems. This course teaches programming using the C language, which is needed by many engineering disciplines, but the programming skills taught in this course are language-agnostic and can be applied to other programming languages as well.

Topics

Computational Problem Solving and Software Engineering

- The development lifecycle
- Development environments
- Control flow
- Iterative design and refinement
- Debugging techniques

- Algorithms
- Data representation and data structures (sequences, arrays and lists)

Programming in C

- The C development and build process
- Variables and types
- Loops, if-statements and functions
- Sequences and arrays
- Structure types
- File I/O
- Pointers and memory management
- Linked lists

Course Objectives And Learning Outcomes

Students successfully completing CSC 111 will be able to:

- describe the compile, edit, debug, execute cycle;
- recognize and use basic data types, variables, constants, operators, and expressions;
- identify and describe the properties of variables including values, scope, persistence and size;
- describe the structure of variables and pointers in computer memory;
- choose appropriate language constructs for a given programming task;
- implement, test, and debug algorithms for solving simple problems;
- analyze the behavior of simple programs involving fundamental programming constructs;
- design programs that use compound data types, including arrays, structures and strings;
- apply dynamic memory allocation and dynamic data structures;
- trace the execution of code;
- read, modify, and extend programs

Textbooks

Please consult the course conneX site for information on required and optional materials before purchasing any books.

Optional:
C Primer Plus (Sixth edition)
by Stephen Prata
Addison-Wesley, ISBN 978-0321928429

Other Materials

Various course materials will be made available online through the course conneX site at:
https://connex.csc.uvic.ca

Assignments

There will be **10** programming assignments which, together, will comprise 18% 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	January 19
Assignment 2	January 26
Assignment 3	February 2
Assignment 4	February 9
Assignment 5	February 23
Assignment 6	March 1
Assignment 7	March 8
Assignment 8	March 15
Assignment 9	March 22
Assignment 10	March 29

You should start assignments early enough to allow time to seek help if you encounter difficulties. Late assignments will not be accepted.

Students are encouraged to discuss assignment problems with each other and form study groups. However, final assignment submissions must be generated independently, and you will only receive credit for your own work. Submitting the work of another student (in whole or in part) and claiming it as your own, or providing your work to another student for them to submit, is plagiarism. In the context of programming assignments (where the submission is code), you are encouraged to discuss all aspects of the assignment with your peers, and to collaborate on the conceptual aspects of the solution, but do not look at the code written by any other student (either over their shoulder or by sharing it electronically).

Submitting the work of others (whether they are your fellow students or not) without proper acknowledgement will be considered a serious academic offense and may result in failure of the course.

Plagiarism detection software will be used on assignment submissions. Substantiated instances of plagiarism, including cases where only a part of the submission has been plagiarized, will be referred to the Department's academic integrity committee. Note that the university calendar (in https://web.uvic.ca/calendar/undergrad/info/regulations/academic-integrity.html) clearly states that a largely plagiarized assignment should result in a failing grade being assigned for the course.

In-Class Exercises

CSC 111 will have in-class exercises that will be handed in for a grade at the end of each lecture. This component is worth **7% of your total grade**.
To allow for unexpected things like sickness, going to the dentist, family emergencies, missing the bus, sleeping in, having a bad day, etc., we will only count your best 90% of your exercise grades.

Labs

There will be 9 graded labs in the course which contribute to 8% of your course grade. During your registered lab class, your grade will be determined by a TA through a series of CHECKPOINTS. If **your grade** is not recorded during your registered lab, it will **not be logistically possible to recover** the lost grades for that week.

Lab exercises are to be completed in your registered lab section. The TA will not record your grade if they have reason to believe you did not complete the exerices yourself.

~~Lab attendance is not mandatory during weeks of Midterm 2 and Midterm 3, however the TA will host office hours in the lab during those schedule times.~~

See the course schedule on conneX for the lab schedule.

Exams

In this course there will be three midterm exams (worth 27% of the course grade) and one final exam (worth 40% of the course grade.)

Exam	Weight	Tentative Exam Dates
Midterm 1	9%	January 30
Midterm 2	9%	February 27
Midterm 3	9%	March 26
Final Exam	40%	To be scheduled by the University

In order to pass the course, students must obtain a **passing grade on the final exam**.

Missing an exam will result in a score of zero being assigned for that exam, except in cases where an academic concession (with appropriate documentation) applies. See the "Grading" section below for the policy regarding missed exams.

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 exam period since special arrangements will not be made for examinations that may conflict with such plans.

Grading

Component	Weight (out of 100%)
Assignments	18%

Component	Weight (out of 100%)
In-Class exercises	7%
Labs	8%
Midterms	27%
Final Exam	40%

In order to pass the course, students must obtain a **passing grade on the final exam**.

Regrade policy

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

Assignment Regrades

We will only take assignment regrades if they are submitted within **7 days** of the assignment being returned.
Also note that we reserve the right to regrade the entirety of the assignment. When requesting a regrade, your old grade will be removed and your new grade could be higher or lower.

To submit a regrade request, you must email the Head Lab Instructor with the following information (requests missing any of this information will not be considered):
• Your name and student number
• The assignment that you would like regraded
• The part you would like regraded
• The reason for requesting a regrade. You must specify which parts of the grading rubric/tests you feel was graded incorrectly.
Regrade requests need to point to a specific, clear error in grading not an argument about the allocation of marks in the rubric. We can only apply a consistent rubric and standard across all assignments.

Midterm Regrades

We will only take midterm regrades if they are submitted within **7 days** of the date they are returned. To submit a midterm regrade request you must see your instructor in person after lecture or in office hours. If there is any indication of an altered/edited exam answer a regrade will not be granted.

Exceptions will be granted for missed work (exams, assignments, exercises) **only** in cases where the university's policy on academic concessions (with appropriate documentation, such as a doctor's note) applies. Documentation must be supplied to the instructor within **5 calendar days** of the missed component or the exception will not be granted. The university's policies on academic concessions (at http://web.uvic.ca/calendar2020-01/undergrad/info/regulations/concessions.html) will be strictly followed. In particular, please note that no exceptions can be made for incidental scheduling issues that may result in a missed exam (e.g. sleeping in, traffic, late busses, etc.). You are responsible for taking the necessary precautions to ensure that you arrive to exams on time.

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.

Grades	Description
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 conneX, or CourseSpaces 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 Standards for Professional Behaviour are at
http://www.uvic.ca/shared/shared%5fengineering/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 (formerly the Resource Centre for Students with a Disability) 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.