University of Victoria
HEAT Course Outline

CSC111: Fundamentals of Programming with Engineering Applications

Course Dates

CRN(s):	Section A01 CRN: 20718 Section A02 CRN: 20719
Term:	Spring 2022
Course Start:	2022-01-10
Course End:	2022-04-29
Withdrawal with 100% reduction of tuition fees:	2022-01-23
Withdrawal with 50% reduction of tuition fees:	2022-02-13
Last day for withdrawal (no fees returned):	2022-02-28

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	DTB A120	2022-01-10	2022-04-07	MR	11:30-12:50	Joe Krysl
A02	DTB A120	2022-01-10	2022-04-07	MR	11:30-12:50	Joe Krysl
B01	ECS 242	2022-01-17	2022-04-07	T	09:30-11:20	
B03	ECS 242	2022-01-17	2022-04-07	W	09:30-11:20	
B04	ECS 242	2022-01-17	2022-04-07	W	14:30-16:20	
B06	ECS 242	2022-01-10	2022-04-07	R	13:30-15:20	

Instructor(s)

Name: **Joe Krysl**
Office: ECS 623
Phone: (250) 472-4766
Email: jkrysl at uvic dot ca
Office Hours: **TBD**

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; the programming skills taught in this course are language-agnostic and can be applied to other programming languages as well.

Instructional Modality

This course will be delivered with a combination of online and in-person instruction, following the University's direction. The course will begin with online delivery on January 10th, and will transition to in-person delivery when directed to do so by the University. When the course returns to in-person delivery, students are expected to attend all required course components (labs and lectures) in person, and **no online alternatives will be available**.

For all delivery modes, the same expectations apply as for in-person offerings. All students are expected to participate fully in the course. During periods of online instruction, this will require reliable and consistent access to a computer (desktop/laptop) and an internet connection. It will not be possible to adjust the course expectations, due dates or learning outcomes for students who do not have the technological means to complete

the course.

Some parts of the course may be offered asynchronously, but you are expected to attend synchronously during the scheduled meeting times listed at the top of this page. Synchronous course components will not be recorded and posted for later viewing. All times given in this outline refer to local time in Victoria, British Columbia (that is, Pacific Standard Time until March 12, 2022 and then Pacific Daylight Time, starting on March 13, 2022).

Online Resources

Course materials will be made available online through Brightspace.

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
- Representations of data structures

Course Objectives And Learning Outcomes

Students successfully completing CSC 111 will achieve the following learning outcomes:

- Understanding the software development cycle (edit, compile, run, debug) and the process of iterative development.
- read, modify, and extend programs
- Identifying, applying and justifying appropriate data types for a particular task.
- Distinguishing different representations of data, including structured representations.
- Analyze the behavior of computer programs based on their source code (including tracing the code by hand)
- Understanding computer memory and applying indirection mechanisms (such as pointers)
- Implementing a computer program based on an abstract description of a task.
- Choosing appropriate language features and data types (including compound data types) for a particular task.
- Apply rigorous testing to validate the correctness of an implementation.
- Understand, modify and extend existing programs or code fragments.

Textbooks

There are no **required** textbooks for this course, but the **optional** book below might be a helpful learning resource. Consider checking the online UVic library and materials provided for the first couple weeks before purchasing any text for this course.

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

Assignments

The course includes 7 programming assignments, worth 22% in total.

Assignment	Weight	Tentative Due Date
Assignment 1	1%	January 23, 2022
Assignment 2	3%	January 30, 2022
Assignment 3	3%	February 13, 2022
Assignment 4	3%	February 27, 2022
Assignment 5	4%	March 13, 2022
Assignment 6	4%	March 27, 2022
Assignment 7	4%	April 10, 2022

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).

On some assignments, you may be permitted to use material from other sources **with proper attribution**. 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.

Lab Exercises

Lab exercises collectively count for 8% of the final grade of the course. To receive the mark for each week's lab exercises, students **must** attend their registered lab section and have their work marked by their lab instructor during the scheduled lab time.

All students are expected to complete all exercises, but the final grade for lab exercises will be computed by dropping the single lowest exercise score (for example: the best 9 out of 10 exercises), to allow up to one week to be missed due to illness or other intervening circumstances.

Exams

There will be two midterm exams during the semester, following the schedule below, and a final exam during the final exam period. All students are expected to complete all three exams, but several weighting schemes are available to accommodate up to one midterm exam being missed due to illness or other circumstances (see the **Grading** section below for details).

All exams must be written in-person, if the instructional modality allows, during the scheduled time. No exceptions can be made to this policy.

Exam	Date
Midterm 1	Thursday, February 10, 2022
Midterm 2	Monday, March 21, 2022
Final Exam	April examination period

In the event that a midterm exam is cancelled due to a University closure (e.g. due to unusual weather conditions), the midterm will be rescheduled to occur during the next scheduled lecture time.

The Final Exam will be scheduled by the University registrar during the April examination period.

The instructor reserves the right to verify exam performance through an oral interview if deemed necessary.

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.

Students are strongly advised not to make plans for travel or employment during the examination period since special arrangements will not be made for examinations that may conflict with such plans.

Pre-Lecture Work

There will be mandatory pre-lecture work that will comprise 10% of the total course mark.

The pre-lecture work will require you to work through a set of lecture material provided with video explanations or readings. A quiz will assess your comprehension 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 pre-lecture content will be posted before each lecture on Brightspace and must be completed before the associated lecture.

Late submissions will not be accepted.

Grading Scheme

To receive a passing grade in the course, **both** of the following conditions must be met. If **either** condition is not met, you will receive a failing grade (a final percentage of 49% or lower).

1. A grade of at least 50% must be achieved on the final examination.
2. The final percentage, according to the computation described below, must be 50% or higher.

The final percentage grade for the course will be computed using whichever of the schemes below produces the **highest** mark.

Component	Scheme 1	Scheme 2	Scheme 3
Programming Assignments	22%	22%	22%
Lab Exercises	8%	8%	8%
Midterm 1	15%	15%	0%
Midterm 2	15%	0%	15%
Pre Lecture work	10%	10%	10%
FInal Exam	30%	45%	45%

The different grading schemes provide a mechanism for accommodating missed work due to illness or other unavoidable circumstances. On the other hand, in cases where a large proportion of coursework cannot be completed (e.g. if multiple assignments or both midterms are missed due to illness), it may become impossible to demonstrate the necessary learning outcomes to pass the course. The University's policies on academic concessions (available from the university calendar) 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 complete exams on time.

Regrade Policy

At times, you may feel that marks were unfairly deducted from an assignment or midterm; errors in grading do occur. In this situation, you may choose to submit your work for a regrade.
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 and exams.

We will only accept assignment and midterm regrade requests if they are submitted within **7 days** of the given grade being returned. To submit a regrade request you must follow the instructions provided in the grade-release annoucement.

NOTE: We reserve the right to regrade the entirety of any assignment/midterm submitted. When requesting a regrade, your old grade will be removed and your new grade could be higher or lower.

Academic Integrity

Plagiarism detection software will be used on assignment and exam submissions. Submitting the work of others without attribution and enabling others to submit your work without attribution are considered serious academic offences and may result in failure of the course. You cannot share your work with others, neither directly, indirectly or by placing it in a publicly accessible location (such as GitHub).

In the context of programming assignments (where the submission is source code), 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, the implementation of 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). Collaboration on the coding aspect of programming assignments is not allowed unless explicitly permitted in writing by the course instructor.

In the context of online and take-home exams, collaboration/communication with other students in any form and the solicitation of answers from any outside source 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.

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

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. 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

UVic guidelines and policy concerning fraud and academic integrity are at http://web.uvic.ca/calendar/undergrad/info/regulations/academic-integrity.htm

Course Withdrawal Deadlines

For the Spring 2022 semester, the following drop deadlines apply to withdrawing from (dropping) courses (as per the University Important Dates Webpage).

- Sunday, January 23rd: Last day to withdraw with 100% tuition refund.
- Sunday, February 13th: Last day to withdraw with 50% tuition refund.
- Monday, February 28th: Last day to withdraw (academic drop date). **All students enrolled after this date will be expected to complete the course requirements, and will receive a final grade.**

Posting of Grades

Marks for assignments and examinations, as well as provisional final grades, will be made available through Brightspace. Each student will be able to view only their own grades.

For some assignment tasks related to software testing, student submissions (with all identifying information removed) and numerical marks for the task will be posted publicly to the entire course. However, no student numbers or names will be associated with the posted information.

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."

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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

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