

## SENG265: Software Development Methods

### Course Dates

CRN(s):	Section A01 CRN: 22766 Section A02 CRN: 22767
Term:	Spring 2022
Course Start:	2022-01-10
Course End:	2022-04-29
Withdrawal with 100% reduction of tuition fees:	2022-01-30
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	ECS 123	2022-01-10	2022-04-07	MR	13:00-14:20	Hausi Muller
A02	ECS 123	2022-01-10	2022-04-07	MR	13:00-14:20	Hausi Muller
B01	ELW B238	2022-01-17	2022-04-07	W	10:30-11:50	
B02	ELW B238	2022-01-17	2022-04-07	W	13:00-14:20	
B03	ELW B238	2022-01-17	2022-04-07	W	14:30-15:50	
B04	ELW B238	2022-01-17	2022-04-07	F	10:30-11:50	
B05	ELW B238	2022-01-17	2022-04-07	F	13:30-14:50	

### Instructor(s)

Name: Hausi Muller  
Office: ECS 614  
Phone: (250) 472-5719  
Email: hausia@uvic.ca

Office Hours:           Comments  
Mon 02:50pm-03:50pm  
Thu 02:50pm-03:50pm

### Course Overview

#### SENG265 — Software Development Methods

Systematic methods for designing, coding, testing and documenting medium-sized programs. Tools and techniques to promote programming productivity and software quality. Topics include specifications, code review and inspection techniques, testing and debugging methods and tools, file system navigation, scripting languages, software tools, environments, instrumenting and profiling and the fundamentals of software configuration management.

#### A word about students and their IT

All students are expected to fully participate in lectures and labs of this course. This course requires reliable and consistent access to a relatively new computer (desktop or laptop, with at least 8GB of DRAM and at least 250 GB of disk space). You must also have a reliable internet connection, although we will do our best to ensure work on assignments can be completed on your computer. It will not be possible to adjust the course expectations, due dates or learning outcomes for students who do not have the technological resources available to complete this course. **Information on student numbers, student grades, submitted work will be stored in file systems and computers under the physical control of UVic.**

### Topics

The topics covered by this course will include:

- Linux command-line basics with Bash
- C programming language
- Python 3 programming language and libraries
- Jupyter Notebooks
- Multi-version software development
- Git version control system
- Build tools such as make and makefiles
- Testing
- GDB debugging tool
- Software evolution and the software life cycle

### Course Objectives and Learning Outcomes

Students successfully completing SENG 265 will be able to:

- Define elementary software-engineering terms
- Describe elementary software-engineering concepts
- Construct solutions for small- to medium-sized problems using the programming languages Python 3 and C
- Organize development work using software-configuration management tools such as git, make, and others
- Explain the purpose of a software-development process
- Investigate the dynamic behavior of C programs using a debugger
- Employ the bash-shell and the Linux operating system in the work of developing software
- Identify and outline the test cases needed to give confidence in the correctness of a software-development artifact

### Textbooks and Other Resources

This SENG 265 course has no required textbook.

All resources required for this course will be posted on the Brightspace SENG 265 course website.

### Assignments

SENG 265 includes four (4) major assignments plus a small initial assignment. **The due dates may change as the course proceeds.** Start assignments early enough to allow time to seek help if you encounter difficulties. **Late assignments will not be accepted.**

Assignment	Weight	Tentative Due Date
Assignment 0	2%	Thu, Jan 20
Assignment 1	10%	Thu, Feb 10
Assignment 2	10%	Thu, Mar 3
Assignment 3	10%	Thu, Mar 17
Assignment 4	10%	Thu, Apr 7

**\*\*While students are encouraged to discuss assignment problems with each other and form study groups, the final assignment solution must be developed and written by each individual student. Using materials from any sources must be clearly labeled and properly attributed. Using any source code from students in a SENG 265 course is considered plagiarism. All programming assignments are checked for plagiarism. Submitting the work of others will be considered a serious academic offense. Posting assignment questions or solutions on public websites is strictly prohibited.**

Please consult the instructor if you have any questions regarding these strict guidelines.

### Exams

There will be four in-class exams (*i.e.*, there is **no exam for this course during the final-exam period of this term**). Each of the four exams will be administered using Brightspace. Please note that the weights of first two exams are less than the second two exams.

Exam	Weight	Date
Exam A	10%	Thu, Jan 27
Exam B	10%	Thu, Feb 17
Exam C	12%	Thu, Mar 17
Exam D	12%	Mon, Apr 4

### Term Portfolio Project

There will be a Term Portfolio project in the form of a Jupyter notebook. This Jupyter notebook will document the learning outcomes of this course especially the different software engineering methods and tools. This portfolio could be used for future co-op and Job applications.

The Term Portfolio project consists of three parts as follows:

Exam	Weight	Date
Assigned		Mon, Jan 10
Part 1	2%	Thu, Feb 3
Part 2	2%	Thu, Mar 10
Part 3	6%	Thu, Mar 31

### Grading

The course work consists of four major components: Exams, Assignments, Labs, and Term Portfolio project.

Coursework	Weight (out of 100%)
Exams	44%
Assignments	42%
Term Portfolio Project	10%
Lab participation	4%

In order to pass the course, students must

- obtain a passing grade on the weighted average of the five assignments,
- obtain a passing grade on the weighted average of the four exams, and
- obtain a passing grade on the weighted average of the three term portfolio project submissions. Of these three course requirements, the assignment requirement is the most challenging to satisfy.

The mark for labs is based on lab participation.

### 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 <i>self-initiating, exceeds expectation</i> and has an <i>insightful</i> 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 <i>good</i> grasp of the subject matter or <i>excellent</i> grasp in one area balanced with <i>satisfactory</i> grasp in the other areas.
C+, C	Satisfactory, or minimally satisfactory. These grades indicate a <i>satisfactory</i> performance and <i>knowledge</i> of the subject matter.
D	Marginal Performance. A student receiving this grade demonstrated a <i>superficial</i> 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).