

SENG265: Software Development Methods

Course Dates

CRN(s):	Section A01 CRN: 22935 Section A02 CRN: 22936
Term:	2023
Course Start:	2023-01-09
Course End:	2023-04-26
Withdrawal with 100% reduction of tuition fees:	2023-01-22
Withdrawal with 50% reduction of tuition fees:	2023-02-12
Last day for withdrawal (no fees returned):	2023-02-28

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	DSB C103	2023-01-09	2023-04-06	TWF	09:30-10:20	Hausi Muller
A02	DSB C103	2023-01-09	2023-04-06	TWF	09:30-10:20	Hausi Muller
B01	ELW B238	2023-01-16	2023-04-06	W	10:30-11:50	
B02	ELW B238	2023-01-16	2023-04-06	W	13:00-14:20	
B03	ELW B238	2023-01-16	2023-04-06	W	14:30-15:50	
B04	ELW B238	2023-01-16	2023-04-06	F	10:30-11:50	
B05	ELW B238	2023-01-16	2023-04-06	F	13:30-14:50	

Instructor(s)

Name: Hausi Muller
Office: ECS 614
Phone: (250) 472-5719
Email: hausi at uvic dot ca

Office Hours:	Comments
Tue 04:00pm-05:00pm	ECS 614
Wed 11:00am-12:00pm	ECS 614

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
- Dynamic data structures in C
- Python 3 programming language and libraries
- Jupyter Notebooks
- Multi-version software development
- Git version control system
- Build tools such as make and makefiles
- Incremental software development and testing
- Software evolution and the software life cycle

Course Objectives and Learning Outcomes

Students successfully completing SENG 265 will be able to:

- Describe basic software-engineering concepts
- Construct solutions for problems using the programming language C
- Employ the bash-shell and the Linux operating system in the work of developing software
- Construct solutions for problems using the programming language Python 3
- Learn incremental software development techniques
- Learn object-oriented programming using Python 3
- Organize development work using software-configuration management tools such as git and make
- Explain the purpose of a software-development process
- Investigate the dynamic behavior of C programs
- 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 major assignments plus a small initial assignment to setup your SENG 265 computing environment. **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 19
Assignment 1	10%	Wed, Feb 8
Assignment 2	10%	Fri, Mar 4
Assignment 3	10%	Wed, Mar 22
Assignment 4	10%	Thu, Apr 6

****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 or providing source code to other 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

This course comprises three in-class midterm exams administered using Brightspace and one final exam administered during the final-exam period of this term.

Exam	Weight	Date
Exam A	8%	Fri, Jan 27
Exam B	8%	Fri, Feb 17
Exam C	8%	Fri, Mar 17
Final Exam	20%	TBA

Term Portfolio Project

This course includes 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 Jupyter notebook portfolio could be handy for future co-op and job applications.

The Term Portfolio project consists of two parts as follows:

Term Portfolio Project	Weight	Date
Assigned		Tue, Jan 10
Part 1	4%	Wed, Mar 8
Part 2	4%	Mon, Apr 3

Grading

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

Coursework	Weight (out of 100%)
Assignments	42%
Exams	44%
Term Portfolio Project	8%
Lab participation	6%

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 lab participation is based on lab attendance and engagement.

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</i> , <i>exceeds expectation</i> and has an <i>insightful</i> grasp of the subject matter.

Grades	Description
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 grasp in one area balanced with satisfactory grasp in the other areas</i> .
C+, C	Satisfactory, or minimally satisfactory . These grades indicate a <i>satisfactory performance and knowledge of the subject matter</i> .
D	Marginal Performance . A student receiving this grade demonstrated a <i>superficial grasp</i> 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/ecs/assets/docs/student-forms/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

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