UNIVERSITY OF CALGARY
FACULTY OF SCIENCE

Department of Computer Science
ICT 602
403 220-6015
cpsc@cpsc.ucalgary.ca

COURSE OUTLINE

1. **Course:** SENG 541, Fundamentals of Software Evolution and Reuse - Winter 2021

   Lecture 01:

Instructor	Email	Phone	Office	Hours
Prof. Robert Walker	walker@ucalgary.ca	403 210-9593	ICT 546	TR 0800-1000 or by appointment, online

   Online Delivery Details:

   This course does not follow a scheduled meeting pattern.

   All lectures will be recorded with audio and video, and posted on the course website, aiming to provide the equivalent of 3 hours of lectures per week. Slides will also be provided in handout configuration as PDF files, also on the course website. In the case of student-led lectures, the student assigned to present will be required to submit their presentation and slides in the appropriate D2L Dropbox, at which point I will post it under the appropriate lecture module so that other students can see it.

   Course Site:

   D2L: SENG 541 L01-(Winter 2021)-Fundamentals of Software Evolution and Reuse

   Note: Students must use their U of C account for all course correspondence.

2. **Requisites:**

   See section 3.5.C in the Faculty of Science section of the online Calendar.

   Prerequisite(s):
   3 units from Software Engineering 300, 301 or Software Engineering for Engineers 480.

   Antirequisite(s):
   Credit for Software Engineering 541 and 641 will not be allowed. Also known as: (formerly Software Engineering 531)

3. **Grading:**

   The University policy on grading and related matters is described in F.1 and F.2 of the online University Calendar.

   In determining the overall grade in the course the following weights will be used:

Component(s)	Weighting %	Date
Participation	10	Ongoing
Paper presentation	15	To be determined
Assignment 1	10	1 February 2021, 11:59 PM MT
Assignment 2	10	22 February 2021, 11:59 PM MT
Assignment 3	10	8 March 2021, 11:59 PM MT
Assignment 4	25	8 April 2021, 11:59 PM MT
Final examination	20	25 April 2021, 11:59 PM MT

   Each of the above components will be given a letter grade using the official university grading system (see section F.1.1). The final grade will be calculated using the grade point equivalents weighted by the percentages given above and then converted to a final letter grade using the official university grade point equivalents.

   All students in SENG 541/641 will be required to provide an **asynchronous oral presentation** of a specific scientific paper by a specific date and time. All students registered in the course will be sent an invitation to a Doodle poll as of 13 January 2021 at 8:00 AM MT; each student is required to select one of the indicated papers and its associated deadline, and this will be the deadline by which time that student will be required to upload an oral presentation of that paper, recording their voice, face, and slides. (The papers can all be found on the course website.) The oral presentation should be of a duration between 15 minutes and 30 minutes (the

recording can be split into parts if necessary to meet limitations of the recording software) and should address the aspects that the first lectures will describe. This recording will be shared with all students registered in SENG 541/641 W21.

The final examination will be **asynchronous and oral**. It will be released on 15 April 2021 at 11:59 PM. Each student is required to provide a recording including their voice, their face, and a screen capture of any pertinent information (e.g., slides) s they answer my questions. This recording can have a maximum duration of 15 minutes. This recording will be kept strictly private as would any written examination.

To obtain a C- or better for the course, a C- or better must be obtained on each of Assignment 4 and the final examination. To obtain a D or better for the course, a D or better must be obtained on each of Assignment 4 and the final examination.

4. **Missed Components Of Term Work:**

The university has suspended the requirement for students to provide evidence for absences. Please do not attend medical clinics for medical notes or Commissioners for Oaths for statutory declarations.

In the event that a student legitimately fails to submit any online assessment on time (e.g. due to illness etc...), please contact the course coordinator, or the course instructor if this course does not have a coordinator to arrange for a re-adjustment of a submission date. Absences not reported within 48 hours will not be accommodated. If an excused absence is approved, then the percentage weight of the legitimately missed assignment could also be pro-rated among the components of the course.

5. **Scheduled Out-of-Class Activities:**

There are no scheduled out of class activities for this course.

6. **Course Materials:**

All readings will be available online, either freely or via the University Library.

Oral presentations by the student will require the video- and audio-recording of the student, which will be provided to all other students in SENG 541/641 in the current year. I recommend using the free software available from screencast-o-matic.com as it will meet the needs of the course.

In order to successfully engage in their learning experiences at the University of Calgary, students taking online, remote and blended courses are required to have reliable access to the following technology:

- A computer with a supported operating system, as well as the latest security, and malware updates;
- A current and updated web browser;
- Webcam/Camera (built-in or external);
- Microphone and speaker (built-in or external), or headset with microphone;
- Current antivirus and/or firewall software enabled;
- Stable internet connection.

For more information please refer to the UofC ELearning online website.

7. **Examination Policy:**

Examinations will be open book/open notes. The final examination will be **asynchronous and oral**. It will be released on 15 April 2021 at 11:59 PM. Each student is required to provide a recording including their voice, their face, and a screen capture of any pertinent information (e.g., slides) as they answer my questions. This recording can have a maximum duration of 15 minutes.

Students should also read the Calendar, Section G, on Examinations.

8. **Approved Mandatory And Optional Course Supplemental Fees:**

There are no mandatory or optional course supplemental fees for this course.

9. **Writing Across The Curriculum Statement:**

For all components of the course, in any written work, the quality of the student's writing (language, spelling, grammar, presentation etc.) can be a factor in the evaluation of the work. See also Section E.2 of the University Calendar.

10. **Human Studies Statement:**

    Students will not participate as subjects or researchers in human studies.

    See also Section E.5 of the University Calendar.

11. **Reappraisal Of Grades:**

    A student wishing a reappraisal, should first attempt to review the graded work with the Course coordinator/instructor or department offering the course. Students with sufficient academic grounds may request a reappraisal. <u>Non-academic grounds are not relevant for grade reappraisals</u>. Students should be aware that the grade being reappraised may be raised, lowered or remain the same. See Section I.3 of the University Calendar.

    a. **Term Work:** The student should present their rationale as effectively and as fully as possible to the Course coordinator/instructor within **ten business days** of either being notified about the mark, or of the item's return to the class. If the student is not satisfied with the outcome, the student shall submit the Reappraisal of Graded Term work form to the department in which the course is offered within 2 business days of receiving the decision from the instructor. The Department will arrange for a reappraisal of the work within the next ten business days. The reappraisal will only be considered if the student provides a detailed rationale that outlines where and for what reason an error is suspected. See sections I.1 and I.2 of the University Calendar

    b. **Final Exam:** The student shall submit the request to Enrolment Services. See Section I.3 of the University Calendar.

12. **Other Important Information For Students:**

    a. **Mental Health** The University of Calgary recognizes the pivotal role that student mental health plays in physical health, social connectedness and academic success, and aspires to create a caring and supportive campus community where individuals can freely talk about mental health and receive supports when needed. We encourage you to explore the mental health resources available throughout the university community, such as counselling, self-help resources, peer support or skills-building available through the SU Wellness Centre (Room 370, MacEwan Student Centre, Mental Health Services Website) and the Campus Mental Health Strategy website (Mental Health).

    b. **SU Wellness Services:** For more information, see www.ucalgary.ca/wellnesscentre or call 403-210-9355.

    c. **Sexual Violence:** The Sexual Violence Support Advocate, Carla Bertsch, can provide confidential support and information regarding sexual violence to all members of the university community. Carla can be reached by email (svsa@ucalgary.ca) or phone at 403-220-2208. The complete University of Calgary policy on sexual violence can be viewed at (https://www.ucalgary.ca/policies/files/policies/sexual-violence-policy.pdf)

    d. **Misconduct:** Academic integrity is the foundation of the development and acquisition of knowledge and is based on values of honesty, trust, responsibility, and respect. We expect members of our community to act with integrity. Research integrity, ethics, and principles of conduct are key to academic integrity. Members of our campus community are required to abide by our institutional Code of Conduct and promote academic integrity in upholding the University of Calgary's reputation of excellence. Some examples of academic misconduct include but are not limited to: posting course material to online platforms or file sharing without the course instructor's consent; submitting or presenting work as if it were the student's own work; submitting or presenting work in one course which has also been submitted in another course without the instructor's permission; borrowing experimental values from others without the instructor's approval; falsification/fabrication of experimental values in a report. Please read the following to inform yourself more on academic integrity:

        Student Handbook on Academic Integrity
        Student Academic Misconduct Policy and Procedure
        Research Integrity Policy

        Additional information is available on the Student Success Centre Academic Integrity page

    e. **Academic Accommodation Policy:** Students needing an accommodation because of a disability or medical condition should contact Student Accessibility Services in accordance with the procedure for accommodations for students with disabilities available at procedure-for-accommodations-for-students-with-disabilities.pdf.

        Students needing an accommodation in relation to their coursework or to fulfill requirements for a graduate degree, based on a protected ground other than disability, should communicate this need, preferably in writing, to the Associate Head of the Department of Computer Science, Nelson Wong by email nelson@cpsc.ucalgary.ca or phone 403-210-8483. Religious accommodation requests relating to class, test

or exam scheduling or absences must be submitted no later than **14 days** prior to the date in question. See Section E.4 of the University Calendar.

f. **Freedom of Information and Privacy:** This course is conducted in accordance with the Freedom of Information and Protection of Privacy Act (FOIPP). Students should identify themselves on all written work by placing their name on the front page and their ID number on each subsequent page. For more information, see Legal Services website.

g. **Student Union Information:** VP Academic, Phone: 403-220-3911 Email: suvpaca@ucalgary.ca. SU Faculty Rep., Phone: 403-220-3913 Email: sciencerep@su.ucalgary.ca. Student Ombudsman, Email: ombuds@ucalgary.ca.

h. **Surveys:** At the University of Calgary, feedback through the Universal Student Ratings of Instruction (USRI) survey and the Faculty of Science Teaching Feedback form provides valuable information to help with evaluating instruction, enhancing learning and teaching, and selecting courses. Your responses make a difference - please participate in these surveys.

i. **Copyright of Course Materials:** All course materials (including those posted on the course D2L site, a course website, or used in any teaching activity such as (but not limited to) examinations, quizzes, assignments, laboratory manuals, lecture slides or lecture materials and other course notes) are protected by law. These materials are for the sole use of students registered in this course and must not be redistributed. Sharing these materials with anyone else would be a breach of the terms and conditions governing student access to D2L, as well as a violation of the copyright in these materials, and may be pursued as a case of student academic or non-academic misconduct, in addition to any other remedies available at law.

Course Outcomes:

- Explain what evolvability and reusability are and why they matter.
- Critique the evolvability/reusability of a software system.
- Improve the evovability/reusability of a software system.
- Apply a variety of techniques to evolve/reuse a software system.
- Build a software tool to perform automated analyses of a software system.
- Design and to perform a small-scale experiment (no humans involved) to evaluate the evolvability/reusability of a software system.
- Design and to perform a small-scale experiment (no humans involved) to evaluate tools/techniques that purport to provide evolvability/reusability

Electronically Approved - Dec 22 2020 11:39

Department Approval

Electronically Approved - Jan 04 2021 10:30

Associate Dean's Approval