



COURSE OUTLINE WINTER 2022

	Date	Initials
Prepared by Instructor		BHF
Approved by Head	Jan 10 2022	amk

1. Calendar Information

SENG 637

Dependability and Reliability of Software Systems

An introduction to the behaviour of fluids and solids; phase transformations, the phase rule and phase diagrams. Ideal and real gases; equations of state and their engineering applications; simple kinetic theory; transport properties of fluids. Liquid state; vapour pressure; shear behaviour; flow of fluids in pipelines. Solids; crystalline and non-crystalline structure; non equilibrium solid phases; electrical and thermal conductivity; dislocations; stress and strain; creep; fracture.

Course Hours: 3 units; H(3)

Academic Credit: 3

Calendar Reference: <http://www.ucalgary.ca/pubs/calendar/current/engineering.html#10159>

2. Learning Outcomes

At the end of this course, you will be able to:

- 1 Understand the fundamental of software reliability and quality
- 2 Design test cases and test suite and assess test adequacy
- 3 Assess reliability and quality of systems and software

3. Timetable

Section	Day(s) of the Week	Time	Location
L01	Monday	17:30-20:20	SA 104

4. Course Instructors

Course Coordinator

Section	First Name	Family Name	Phone	Office	Email
L01	Behrouz	Far	403-210--5411	ICT541	far@ucalgary.ca

Other Instructors

Section	First Name	Family Name	Phone	Office	Email

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Teaching Assistants

Section	First Name	Family Name	Phone	Office	Email
L01	Yousef	Mehdad			

5. Assessments

Assessment is based on completion of 5 assignments and submission by their due date.

6. Use of Calculators in Examinations

n/a

7. Final Grade Determination

The final grade in this course will be based on the following components:

Component	Learning Outcome(s) Evaluated	Weight
Assignment (5 parts)	A1, A3, A5	100%

Total: 100%

Notes:

Conversion from a score out of 100 to a letter grade will be done using the conversion chart shown below. This grading scale can only be changed during the term if the grades will not be lowered.

Letter Grade	Total Mark (T)
A+	$T \geq 96.0\%$
A	$90.0\% \leq T < 96.0\%$
A-	$85.0\% \leq T < 90.0\%$
B+	$80.0\% \leq T < 85.0\%$
B	$75.0\% \leq T < 80.0\%$
B-	$70.0\% \leq T < 75.0\%$
C+	$65.0\% \leq T < 70.0\%$
C	$60.0\% \leq T < 65.0\%$
C-	$55.0\% \leq T < 60.0\%$
D+	$50.0\% \leq T < 55.0\%$
D	$47.0\% \leq T < 50.0\%$
F	$T < 47.0\%$

8. Textbook

The following textbook(s) is required for this course:

Title	Foundations of Software Testing
Author(s)	Aditya P. Mathur
Edition, Year	2008
Publisher	Pearson (Available online)

Title	Software Reliability Engineering:
Author(s)	John D. Musa
Edition, Year	2004
Publisher	Authorhouse Publishers

The following textbook(s) is recommended for this course:

Title	
Author(s)	
Edition, Year	
Publisher	

Title	
Author(s)	
Edition, Year	
Publisher	

Title	
Author(s)	
Edition, Year	
Publisher	

9. University of Calgary Policies and Supports

*SSE ADVISING AND POLICIES

All Schulich School of Engineering students have access to a D2L site titled "Engineering Student Centre". Students have a responsibility to familiarize themselves with the policies available on this site.

*ACADEMIC MISCONDUCT

Academic Misconduct refers to student behavior which compromises proper assessment of a student's academic activities and includes: cheating; fabrication; falsification; plagiarism; unauthorized assistance; failure to comply with an instructor's expectations regarding conduct required of students completing academic assessments in their courses; and failure to comply with exam regulations applied by the Registrar.

For information on the Student Academic Misconduct Policy and Procedure please visit:

<https://www.ucalgary.ca/legal-services/sites/default/files/teams/1/Policies-Student-Academic-Misconduct-Policy.pdf>

<https://www.ucalgary.ca/legal-services/sites/default/files/teams/1/Policies-Student-Academic-Misconduct-Procedure.pdf>

Additional information is available on the Academic Integrity Website at

<https://ucalgary.ca/student-services/student-success/learning/academic-integrity>.

*ACADEMIC ACCOMODATION

It is the student's responsibility to request academic accommodations according to the University policies and procedures listed below. The Student Accommodations policy is available at <https://www.ucalgary.ca/legal-services/sites/default/files/teams/1/Policies-Student-Accommodation-Policy.pdf>.

Students needing an accommodation based on disability or medical concerns should contact Student Accessibility Services (SAS) in accordance with the Procedure for Accommodations for Students with Disabilities

(<https://www.ucalgary.ca/policies/files/policies/https://www.ucalgary.ca/legal-services/sites/default/files/teams/1/Policies-Accommodation-for-Students-with-Disabilities-Procedure.pdf>). SAS will process the request and issue letters of accommodation to instructors. For additional information on support services and accommodations for students with disabilities, visit www.ucalgary.ca/access/.

*INSTRUCTOR INTELLECTUAL PROPERTY

Course materials created by instructors (including presentations and posted notes, labs, case studies, assignments and exams) remain the intellectual property of the instructor. These materials may NOT be reproduced, redistributed or copied without the explicit consent of the instructor. The posting of course materials to third party websites such as note-sharing sites without permission is prohibited. Sharing of extracts of these course materials with other students enrolled in the course at the same time may be allowed under fair dealing.

*FREEDOM OF INFORMATION AND PROTECTION OF PRIVACY

Student information will be collected in accordance with typical (or usual) classroom practice. Students' assignments will be accessible only by the authorized course faculty. Private information related to the individual student is treated with the utmost regard by the faculty at the University of Calgary.

*COPYRIGHT LEGISLATION

All students are required to read the University of Calgary policy on Acceptable Use of Material Protected by Copyright (<https://www.ucalgary.ca/legal-services/sites/default/files/teams/1/Policies-Acceptable-Use-of-Material-Protected-by-Copyright-Policy.pdf>) and requirements of the copyright act (<https://laws-lois.justice.gc.ca/eng/acts/C-42/index.html>) to ensure they are aware of the consequences of unauthorised sharing of course materials (including instructor notes, electronic versions of textbooks etc.). Students who use material protected by copyright in violation of this policy may be disciplined under the Non-Academic Misconduct Policy <https://www.ucalgary.ca/legal-services/sites/default/files/teams/1/Policies-Student-Non-Academic-Misconduct-Policy.pdf>.

*MEDIA RECORDING (if applicable)

Please refer to the following statement on media recording of students:

https://elearn.ucalgary.ca/wp-content/uploads/2020/05/Media-Recording-in-Learning-Environments-OSP_FINAL.pdf

**Media recording for lesson capture*

The instructor may use media recordings to capture the delivery of a lecture. These recordings are intended to be used for lecture capture only and will not be used for any other purpose. Although the recording device will be fixed on the Instructor, in the event that incidental student participation is recorded, the instructor will ensure that any identifiable content (video or audio) is masked, or will seek consent to include the identifiable student content to making the content available on University approved platforms.

**Media recording for self-assessment of teaching practices*

The instructor may use media recordings as a tool for self-assessment of their teaching practices. Although the recording device will be fixed on the instructor, it is possible that student participation in the course may be inadvertently captured. These recordings will be used for instructor self-assessment only and will not be used for any other purpose.

**Media recording for the assessment of student learning*

The instructor may use media recordings as part of the assessment of students. This may include but is not limited to classroom discussions, presentations, clinical practice, or skills testing that occur during the course. These recordings will be used for student assessment purposes only and will not be shared or used for any other purpose.

SEXUAL VIOLENCE POLICY

The University recognizes that all members of the University Community should be able to learn, work, teach and live in an environment where they are free from harassment, discrimination, and violence. The University of Calgary's sexual violence policy guides us in how we respond to incidents of sexual violence, including supports available to those who have experienced or witnessed sexual violence, or those who are alleged to have committed sexual violence. It provides clear response procedures and timelines, defines complex concepts, and addresses incidents that occur off-campus in certain circumstances. Please see the policy available at <https://www.ucalgary.ca/legal-services/sites/default/files/teams/1/Policies-Sexual-and-Gender-Based-Violence-Policy.pdf>

*OTHER IMPORTANT INFORMATION

Please visit the Registrar's website at: <https://www.ucalgary.ca/registrar/registration/course-outlines> for additional important information on the following:

- Wellness and Mental Health Resources
- Student Success
- Student Ombuds Office
- Student Union (SU) Information
- Graduate Students' Association (GSA) Information
- Emergency Evacuation/Assembly Points
- Safewalk

10. Statements Specific to Winter 2022

The course will be temporarily online (synchronous delivery).

Students are expected to make every effort to attend lectures and engage in the discussions.

The assignments should be submitted by their due date. Late submissions will not be accepted. Submission of all assignments is necessary to pass the course.

Course Format and Scheduling

Expectations for Attendance and Engagement in Sessions

Guidelines for Completing and Submitting Coursework

11. Additional Course Information