	Date	Initials
Prepared by Instructor	03-12-2025	DK, DL
Approved by Dept/Program Lead	05-Jan	DTW
Approver Dept/Program	Electrical & Software	

1. Calendar Information

SENG 533
Software Performance Evaluation

Analyzing quality requirements of large-scale software. Performance analysis, testing, and tuning techniques. Evaluating software scalability. Capacity planning methodologies. Issues related to safety, security, and availability of software. Applying performance evaluation techniques to practical large-scale applications.

Course Hours: 3 units; H(GFC Hours)
Academic Credit: 3
Calendar Reference: https://www.ucalgary.ca/pubs/calendar/current/software-engineering.html#10265

2. Learning Outcomes

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

1   Identify the typical steps involved in evaluating software performance.
2   Apply simple analytic modeling techniques for analyzing the performance of software systems.
3   Apply techniques to design performance experiments and analyse their results.
4   Develop performance evaluation experiments to test large-scale applications.

3. Timetable

Section	Day(s) of the Week	Time	Location
LEC 01	TR	08:00-09:15	ENE 243
LAB B01	M	11:00-12:50	ENG 203
LEC 02	TR	12:30-13:45	ENE 243
LAB B02	W	11:00-12:50	ENG 203
LAB B03	F	11:00-12:50	ENG 203
LAB B04	M	13:00-14:50	ENG 203

4. Course Instructors

Course Coordinator (multi-section courses only)

Section	First Name	Family Name	Phone	Office	Email
LEC 02	Diwakar	Krishnamurthy	4.032E+09	ICT535	dkrishna@ucalgary.ca

Instructors

Section	First Name	Family Name	Phone	Office	Email
L01	Desiree	Leal			desiree.leal1@ucalgar
L02	Diwakar	Krishnamurthy		ICT 535	dkrishna@ucalgary.ca

Teaching Assistants

Section	First Name	Family Name	Phone	Office	Email
ALL	Kenzy	Hamed			kenzy.hamed@ucalga
ALL	Sajad	Sarlaki			sajad.sarlaki1@ucalg
ALL	Minh	Le			minh.le4@ucalgary.ca
ALL	Gerry	Wu			jiajun.wu1@ucalgary.c
ALL	Dhruvi	Thakkar			dhruvi.thakkar@ucalg
ALL	Goodness	Anyanwu			goodness.anyanwu@
ALL	Guojun	Tang			guojun.tang@ucalgary
ALL	Yasaman	Honarparvar			yasaman.honarparvar
ALL	Janice	Huh			janice.huh@ucalgary.
ALL	Sara	Mirshahi			sara.mirshahi1@ucalg

5. Assessments

Both sections will have 4 quizzes held in class: closed book, formula sheet allowed (tentative dates January 29, February 26, March 19, April 2).
In-class participation: 50% of in-class questions answered via TopHat.
One hands on project: completed in groups of 4, due April 10.
One midterm: 75 minutes held in class (March 10 tentative); closed book, formula sheet allowed.
One final exam: registrar scheduled, 3 hours; closed book, formula sheet allowed.

For reappraisals of term work or final assessments, please refer to the SSE Reappraisal of Graded Term Work and Academic Assessments Policy. **Requirements related to missed asessments will have to be discussed with the instrucors within a week of the missed requirement.**
(https://schulich.ucalgary.ca/sites/default/files/teams/1/SSE%20Reappraisal%20Policy.pdf) and forms are available on the Engineering Student Center D2L site.

6. Use of Calculators in Examinations

You may use any calculator you wish for studying and completing lab reports. However, you must use only one of the following sanctioned Schulich School of Engineering calculators during exams: Casio FX-260S, Casio FX-300MS, Casio FX-95ES Plus, Casio FX-300ESPLUS2 (2nd Edition), TI-30XIIS, TI-30Xa, Sharp EL-531XTB-WH, and HP10S Plus.

7. Final Grade Determination

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

Component	Learning Outcome(s) Evaluated	Weight
Quizzes (Best 3 out of 4)	1, 2, 3	15%
In-class Participation	1, 2, 3, 4	5%
Midterm	1, 2, 3	20%
Project	1, 2, 3, 4	25%
Final Exam	1, 2, 3	35%

| | **Total:** | 100% |

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 ≥	95.0%
A	90.0%	≤ T <	95.0%
A-	85.0%	≤ T <	90.0%
B+	80.0%	≤ T <	85.0%
B	75.0%	≤ T <	80.0%
B-	70.0%	≤ T <	75.0%
C+	65.0%	≤ T <	70.0%
C	60.0%	≤ T <	65.0%
C-	55.0%	≤ T <	60.0%
D+	50.0%	≤ T <	55.0%
D	45.0%	≤ T <	50.0%
F	0.0%	T <	45.0%

8. Textbook

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

Title	
Author(s)	
Edition, Year	
Publisher	

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

Title	The Art of Computer Systems Performance Analysis: Techniques for
Author(s)	Raj Jain
Edition, Year	
Publisher	Wiley

Title	Performance by Design: Computer Capacity Planning By Example
Author(s)	Daniel A. Menasce, Lawrence W. Dowdy, Virgilio A.F. Almeida
Edition, Year	
Publisher	Prentice Hall

Title	Quantitative System Performance: Computer System Analysis Using
Author(s)	Edward D. Lazowska, John Zahorjan, G. Scott Graham, Kenneth C. Sevcik
Edition, Year	
Publisher	Prentice Hall

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 more information on the University of Calgary Student Academic Misconduct Policy and Procedure and the SSE Academic Misconduct Operating Standard, please visit: https://schulich.ucalgary.ca/current-students/undergraduate/student-resources/policies-and-procedures

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/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/.

Students needing an accommodation in relation to their coursework or to fulfil requirements for a degree based on a Protected Ground other than Disability, should communicate this need by submitting a SSE Request for Academic Accommodation Form (ESC D2L - Forms) to the Associate Head (Undergraduate Studies) within 10 business days prior to the class, test, exam, or assignment at issue.

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%20Policy.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. Additional Course Information
Course Format and Scheduling

Guidelines for Completing and Submitting Coursework