	Date	Initials
Prepared by Instructor	15-Jun-21	SB
Approved by Head	17-Jun-21	amk

1. Calendar Information

ENSF 594
Principles of Software Development II

A fundamental study of software design and development topics for Engineering students. Topics include: fundamental programming constructs; key features of an object-oriented programming language, especially inheritance and polymorphism, elements of object-oriented design; programming and application of common data structures; strategies and tools for testing and debugging. Topics of the course include: parallel programming; event-driven programming; database programming; socket programming, and the development of client-server architectures; software engineering best practices.

Course Hours:	3 units; H (3-2)
Academic Credit:	3
Calendar Reference:	http://www.ucalgary.ca/pubs/calendar/current/software-engineering-for-engineers.html#

2. Learning Outcomes

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

1. Have a deep understanding, and practical knowledge of object oriented analysis, design, and development.
2. Design and develop software programs.
3. Have a deep undrestanding of data structures and algorithms.
4. Develop debugging and problem-solving skills.
5. Use different design and development utilities and tools.

3. Timetable

Section	Day(s) of the Week	Time	Location
LEC 1	MW	08:30 - 11:15	online
LAB 1	MW	12:00 - 13:45	online

4. Course Instructors

Course Coordinator

Section	First Name	Family Name	Phone	Office	Email
L01	Sohaib	Bajwa			sohaib.bajwa1@ucalgary.ca

Other Instructors

Section	First Name	Family Name	Phone	Office	Email

Teaching Assistants

5. Examinations

There will not be a midterm or a final exam for this course.

6. Use of Calculators in Examinations

7. Final Grade Determination

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

Component	Learning Outcome(s) Evaluated	Weight
Individual Lab Assignments	1 - 5	70%
Individual Online Quizzes	1 - 4	30%

Total: 100%

Notes:

a) 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.

b) A penalty of 20% will be deducted for lab assignments that are late by up to 24 hours. Lab assignments submitted later than 24 hours after the due time will be marked as zero. Circumstances beyond one's control (e.g. sickness, etc.) should be discussed with the instructor.

Letter Grade	Total Mark (T)
A+	$T \geq 95.0\%$
A	$90.0\% \leq T < 95.0\%$
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-	$56.0\% \leq T < 60.0\%$
D+	$53.0\% \leq T < 56.0\%$
D	$50.0\% \leq T < 53.0\%$
F	$T < 50.0\%$

8. Textbook

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

Title	Core Java Volume I--Fundamentals, 11th Edition
Author(s)	Cay S. Hortsmann
Edition, Year	11th Edition, 2018
Publisher	Prentice Hall

Title	Core Java Volume I--Advanced Features, 11th Edition
Author(s)	Cay S. Hortsmann
Edition, Year	11th Edition, 2018
Publisher	Prentice Hall

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

Title	Introduction to Algorithms
Author(s)	T. Cormen, C. Leiserson, R. Rivest, C. Stein
Edition, Year	Third Edition, 2009
Publisher	The MIT Press

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

Title	Data Structures & Algorithms in Java
Authors	Michael T. Goodrich, Roberto Tamassia, Michael H. Goldwasser
Edition, Year	Sixth Edition,
Publisher	Wiley, 2014

9. University of Calgary Policies and Supports

<u>*SSE ADVISING AND POLICIES</u>

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.

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*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://ucalgary.ca/policies/files/policies/student-academic-misconduct-policy.pdf
https://ucalgary.ca/policies/files/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://ucalgary.ca/student-services/access/prospective-students/academic-accommodations. 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/procedure-for-accommodations-for-students-with-disabilities.pdf). Students who require an accommodation in relation to their coursework based on a protected ground other than Disability should communicate this need in writing to their Instructor.
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/ .

<u>*INSTRUCTOR INTELLECTUAL PROPERTY</u>
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.

<u>*FREEDOM OF INFORMATION AND PROTECTION OF PRIVACY</u>
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.

<u>*COPYRIGHT LEGISLATION</u>
All students are required to read the University of Calgary policy on Acceptable Use of Material Protected by Copyright (https://www.ucalgary.ca/policies/files/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/pubs/calendar/current/k.html.

<u>*MEDIA RECORDING (if applicable)</u>
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/policies/files/policies/sexual-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 Summer 2021

Course Format and Scheduling
Course content will be delivered through synchronous online learning. Synchronous learning will take place online during the registrar-scheduled class times for this course. Students are expected to join the class at the designated time, just as they would attend an in-person class. A video of the synchronous lecture will be made available in D2L after the lecture.

Expectations for Attendance and Engagement in Online Sessions
Active engagement in class and with course material is essential in any course. In the online context, students must take increased ownership of their learning.
Expectations for attendance at synchronous sessions are the same as they are in a face-to-face course. Students are expected to actively attend synchronous sessions and adhere to class norms. These include:
-Having the camera on during synchronous sessions (unless advised otherwise by instructor)
-Keeping the microphone on mute unless called on by the instructor (or participating in oral discussion)
-Using the features and tools in Zoom as requested by the instructor
-Communicating in a professional and respectful manner at all times
If it appears that you are not actively engaged in the class (for example, not responding to the instructor, not joining breakout rooms, etc.), your instructor reserves the right to remove you from the Zoom session.

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Guidelines for Completing and Submitting Coursework

Please submit all assignments electronically using the dropbox in D2L. Assignments should have a file name as follows: "First Name Last Name Assignment Number" (e.g., Alex Smith Assignment 2). Assignments must be submitted by 11:59pm on their due date. It is the student's responsibility to keep a copy of each submitted assignment and to ensure that the proper version is submitted

11. Additional Course Information

Individual Lab Assignments:

There will be five individual lab assignments. Each lab assignments has equal weightage. The due dates of the labs are: July 09, July 19, July 26, Aug 02, Aug 11 respectively.

Individual Online Quizzes:

There will be six online quizzes (D2L) throughout the Summer 2021 semester (we will count the best 5 of 6). These are not timed assessment. The quiz will be available for one week. You can complete the quiz anytime during the week. Once you start the quiz, you can leave it unfinish and complete it later but within that week. The first qiuz will be made available on June 28 at 11:30 PM, and you will have one week (till July 05 by 11:30 PM) to complete the quiz.

The quiz will test yout understanding of what we have learned in that particular week.

Software Tool: We will use the Java programming languae to teach Data structure concepts. The recommended IDE is Eclipse IDE that is available for both Mac and Windows based PC. See the link for more details about downloading and installing Eclise: https://www.eclipse.org/ide/.

Students should note that there is an expectation that they have access to a reasonable PC or Mac desktop or laptop in which to work on their programming environment. If students don't, contact the instructor/department to get access to a workstation on campus remotely