



CS 60-311

Introduction to Software Engineering

Course Outlines – Fall 2018

Course Description: This course introduces the fundamental concepts, common principles, and general techniques of software engineering. It discusses the main issues involved in the development life-cycle of nontrivial software systems, including process models, feasibility studies, requirements elicitation and definition, rapid prototyping, design methodologies, verification and validation, and software evolution. Students taking this course are required to work on projects, which are designed to go through the major phases of large-scale software system development.

Instructor	Dr. Sherif Saad shsaad@uwindsor.ca
Office	Lambton Tower Room 5106, Office Hours Monday 11:00 – 1:30 PM , Wednesday 11:00 –1:30 PM or by appointment
Lectures	When: 5:30pm - 6:50pm on Tuesday and Thursday Where: Erie Hall Room: 1118
Labs	No Labs

Commitment: 3 hours lecture, 6 - 8 hours self-study per week

Prerequisite: 60-212 and 60-254

Course Web Page: Available at Blackboard website and GitHub

Course Objectives:

- To introduce the students to the principles of the software design, development, and testing.
- To Introduce the students to different software development lifecycle.
- Explain various techniques for designing software systems.
- Expose the students to software design and modelling techniques
- Create awareness of the common challenges in design, document, evaluate, implement large-scale software systems
- Practice the design and development of nontrivial software systems

Learning Outcomes: by the end of this course the students who successfully completed the course will be able to

- Analyze software requirements to identify functional and non-functional software requirements.
- Select and apply appropriate software process.
- Design and implement a software system using an agile approach
- Test and evaluate software quality using a systematic process.



- Explain common software architecture patterns, software design patterns.
- Document software requirements specification, design, and test plan.

Textbook (optional)

Software Engineering, Global Edition Paperback – 2017 by **Sommerville Ian** - Paperback

Publisher: Pearson (2017) ISBN-10: 1292096136 ISBN-13: 978-1292096131

Evaluation scheme:

3 Assignments	15% (5% each)
Midterm	15% on Tuesday OCT 16, 2018 during class time
Participation	5% bonus (In-class & Online)
Project	45%
Final Exam	25% on Tuesday DEC 18, 2018 at 7:00 PM

Grades A numeric (integer-valued) final grade out of 100 will be assigned to each student based on the evaluation scheme given above. Non-integer values will be rounded to the nearest integer. A final grade below 50 will be considered as a failure. More information is available at:

http://www.uwindsor.ca/secretariat/sites/uwindsor.ca.secretariat/files/grading_and_averages_amended_april_13_2018.pdf

Course Schedule

Date	Topic	Submission
Week 01 Sep 03 – 07, 2018	Introduction to Software Engineering	
Week 02 Sep 10 – 14, 2018	Software Processes	Submit Project Proposal (3%)
Week 03 Sep 17 – 21, 2018	Software Requirements Engineering	
Week 04 Sep 24 – 28, 2018	Agile Software Development	Submit Assignment 1 (5%)
Week 05 Oct 01 – 05, 2018	System Modelling	Submit Project Part 1 (14 %)
Week 06 Oct 08 – 12, 2018	No Classes (Reading Break)	
Week 07 Oct 15 – 19, 2018	Architectural Design	Midterm Exam
Week 08 Oct 22 – 26, 2018	Design and Implementation	Submit Assignment 2 (5%)
Week 09 Oct 29 – 02, 2018	Software Testing	Submit Project Part 2 (14%)
Week 10 Nov 05 – 09, 2018	Software Evaluation	
Week 10 Nov 12 – 16, 2018	Software Security	Submit Assignment 3 (5%)
Week 11 Nov 19 – 23, 2018	Software Reliability	
Week 12 Nov 26 – 30, 2018	Research Directions	Submit Project Part 3 (14%)
Week 13 Dec 03- 07, 2018	Course Wrap-up	



Assessment Details:

- Exams are closed book, and closed notes.
- Assignments: The course has three **individual assignments** each worth 5%. An electronic copy of the assignment should be submitted to the course TA.
- Project: Students will execute the project per group. Every group (3 - 5 students per group) will work on a semester-long course project related to software engineering. Each group will design, implement, and document given software system. Another group will evaluate and test the software system, produced by one group. The grading will be done at the group and individual levels.
- Class Participation: Students are expected to participate in class discussions and in-class problem solving.

SET

Student Evaluation of Teaching forms will be administered in the last two weeks of classes, in accordance with Senate policy.

Course Regulations

1. No student is allowed to take a course more than twice without permission from the Associate Dean.
2. In the exceptional case that a student misses a midterm/final exam for a valid reason, i.e. supported by appropriate documentation, the student could write a makeup exam. In case of a Doctor's note, the student must submit a Student Medical Certificate signed by a Medical Doctor and the note must specifically state that the student was incapable of writing the exam on the day of the test.
3. If a student is sick, s/he must inform the instructor about his/her illness within 7 days, and with a supporting doctor's note which clearly states s/he is not able to attend the exam/test/assignment.
4. If a student has a medical condition, which may cause problems during the term, s/he must inform the instructor in writing with supporting documents before the last day of classes. No consideration will be made afterwards, except for the final exam.
5. No extensions to the assignments, or the project will be allowed, and no make-ups will be considered.
6. If a student is caught adopting unfair means (e.g. plagiarism), that student will face serious consequences including official disciplinary procedures (see policies below).

Course Policies

1. Late assignment: The penalty for late submission of assignments will be 1% for each 24- hour period. No assignment will be accepted later than three days (including weekends) after the deadline.
2. Lecture Attendance: Students are expected to attend all the lectures and tutorials.
3. Coursework Mark Appeals: All marks must be appealed within 10 days of the mark being posted.
4. Late Project-deliverable Submission: No late submission for any project-deliverable will be accepted unless prior arrangements have been made with the instructor at least 48 hours before the due date.

Note to Students: Students who have issues with the conduct of the course should discuss them with the instructor first. If these discussions do not resolve the issue, then students

should feel free to contact the Chair of the School by email or the Chair's Secretary to set up an appointment.

Policy on Misconduct

The instructor will put a great deal of effort into helping students to understand and learn the material in the course. However, the instructor will not tolerate any form of cheating. The instructor will report any suspicion of cheating to the Director of the School of Computer Science. If sufficient evidence is available, the Director will begin a formal process according to the University Senate Bylaws. The instructor will not negotiate with students who are accused of cheating but will pass all information to the Director of the School of Computer Science. The following behaviour will be regarded as cheating (this list is not exhaustive – more examples in Appendix A, Senate Bylaws 31:

1. Copying assignments or labs or presenting someone else's work as your own
2. Plagiarism-detection software (e.g turnitin) will be used for all student assignments in this course.
3. Allowing another student to copy an assignment/project from you and present it as their own work
4. Copying from another student during a test or exam
5. Referring to notes, textbooks, etc., during a test or exam (unless otherwise stated)
6. Talking during a test or exam
7. Not sitting at the pre-assigned seat during a test or exam
8. Communicating with another student in any way during a test or exam
9. Having access to the exam/test paper prior to the exam/test
10. Explicitly asking a proctor for the answer to a question during an exam/test
11. Modifying answers after they have been marked
12. Any other behaviour which attempts unfairly to give you some advantage over other students during the grade-assessment process
13. Refusing to obey the instructions of the officer in charge of an examination

Several University of Windsor students have been caught cheating during the last few years. In most cases the evidence was sufficient to invoke a disciplinary process which resulted in various forms of punishment including letters of censure, loss of marks, failing grades, and expulsions. As an example, a student who copied a project from another student and presented it as his own was expelled from the university. Another student who was caught copying in a midterm was suspended for one year. Do not cheat, if you are caught and found guilty, you could be expelled from the university and will have to explain why when you search for a job.

Exam Content Confidentiality

Examinations, quizzes, assignments and projects given in this course are protected by copyright. Reproduction or dissemination of examinations or the contents or format of examinations/quizzes in any manner whatsoever (e.g., sharing content with other students), without the express permission of the instructor, is strictly prohibited. Students who violate this rule or engage in any other form of academic dishonesty will be subject to disciplinary action under Senate Bylaw 31: Student Affairs and Integrity