Description:
The course is an introduction to engineering processes and project management frameworks and their application for software development projects. Main topics will include analysis of the main modern software processes (mainly Agile, Lean and DevOps) and project management models based on the nature of the software systems and the project settings. It will also include process and project metrics, tools and related standards/best practices. A main objective is to promote applying engineering practices with quantifiable engineering principles supported with management discipline that are adequate for developing software systems with various application and project settings

Course Instructor: Hamada H. Ghenniwa,
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Contact Hours: 3 lecture hours/week; 2 tutorial hour/week

Antirequisites: Computer Science 3377a/b

Prerequisites: SE 2203a/b, SE 2250a/b or ECE 2241a/b, SE 2251a/b or Mathematics 2155a, SE 2205a/b or Computer Science 2210a/b.

Co-requisite: SE 3350 A/B.

Unless you have either the requisites for this course or written special permission from your Dean to enroll in it, you will be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from the course for failing to have the necessary prerequisites.

CEAB Units: Engineering Science 100%.

Course Materials:
- Course Notes: Partially available on the course OWL website
- Complementary Reading Material: available on the course OWL website
- References

General Learning Objectives

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<thead>
<tr>
<th>Knowledge Base</th>
<th>Individual Work</th>
<th>Ethics and Equity</th>
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<tbody>
<tr>
<td>Problem Analysis</td>
<td>Team Work</td>
<td>Economics and Project Management</td>
</tr>
<tr>
<td>Investigation</td>
<td>Communication</td>
<td>Life-Long Learning</td>
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<td>Design</td>
<td>Professionalism</td>
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<tr>
<td>Engineering Tools</td>
<td>Impact on Society</td>
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Notation: \( x/y \), where \( x \) is the cognitive level (1: Remember, 2: Understand, 3: Apply) at which the attribute is assessed and \( y \) is the academic level (1: Beginner, 2: Intermediate, 3: Advanced) at which the attribute is assessed.

**Specific Learning Objectives:**

Upon successful completion of this course, the student will have the understanding of the fundamental knowledge of the following:

- software development and process models with focus on Agile, Lean and DevOps
- applying software process models for software development improvements
- the main software metrics and their usage to estimate software size and work efforts
- project management models based on stages and activities
- the main elements of applying project management for software development
- principles of software project monitoring and control
- principles of risk analysis as applied to software project management
- the importance of people’s role in a software project

**The Main Topics include:**

- Introduction to software development process and project management
- Software development process models and management
- Project management principles
- Software process and project metrics
- Software project planning
- Software project monitoring and control
- Risk management
- People management

**Evaluation:**

<table>
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<tr>
<th>Course Component</th>
<th>Weight</th>
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<tr>
<td>Written Assignments</td>
<td>35%</td>
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<tr>
<td>Midterm Exam (closed book)</td>
<td>15%</td>
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<tr>
<td>Final Exam (closed book)</td>
<td>50%</td>
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To obtain a passing grade in the course, a mark of 50% or more must be achieved on each of the course components (final exam, midterm exam and assignments). Any component mark < 50% will result in a final course grade of 48% or less.

The course component includes from 3 to 5 written assignments, and one midterm exam. Midterm test rules, time, and location will be announced in the course website. The final examination is a closed book for three hours and will be take place during the regular examination period.

**Late Submission Policy:** Assignments and laboratories works will be penalized by 4% of the available marks per day for late submission. Assignments submitted more than 3 days late will not be accepted.

**Use of English:** In accordance with Senate and Faculty Policy, students may be penalized up to 10% of the marks on all assignments, tests, and examinations for improper use of English. Additionally, poorly written work with the exception of the final examination may be returned without grading. If resubmission of the work is permitted, it may be graded with marks deducted for poor English and/or late submission.
Attendance: All classes, laboratories, and tutorials are mandatory unless otherwise stated. Any student who, in the opinion of the instructor, is absent too frequently from class, laboratory, or tutorial periods will be reported to the Dean (after due warning has been given). On the recommendation of the department, and with the permission of the Dean, the student will be debarred from taking the regular final examination in the course.

Absence Due to Illness or Other Circumstances: Students should immediately consult with the instructor or department Chair if they have any problems that could affect their performance in the course. Where appropriate, the problems should be documented (see the attached “Instructions for Students Unable to Write Tests or Examinations or Submit Assignments as Scheduled”). The student should seek advice from the instructor or department Chair regarding how best to deal with the problem. Failure to notify the instructor or department Chair immediately (or as soon as possible thereafter) will have a negative effect on any appeal.

For more information concerning medical accommodations, see the relevant section of the Academic Handbook:
http://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_medical.pdf

For more information concerning accommodations for religious holidays, see the relevant section of the Academic Handbook:
http://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_religious.pdf

Missed Midterm Examinations: If a student misses a midterm examination, the exam will not be rescheduled. The student must follow the Instructions for Students Unable to Write Tests and provide documentation to their department within 24 hours of the missed test. The department will decide whether to allow the reweighting of the test, where reweighting means the marks normally allotted for the midterm will be added to the final exam. If no reasonable justification for missing the test can be found, then the student will receive a mark of zero for the test.

If a student is going to miss the midterm examination for religious reasons, they must inform the instructor in writing within 48 hours of the announcement of the exam date or they will be required to write the exam.

Cheating and Plagiarism: Students must write their essays and assignments in their own words. Whenever students take an idea or a passage from another author, they must acknowledge their debt both by using quotation marks where appropriate and by proper referencing such as footnotes or citations. University policy states that cheating, including plagiarism, is a scholastic offence. The commission of a scholastic offence is attended by academic penalties, which might include expulsion from the program. If you are caught cheating, there will be no second warning.

All required papers may be subject to submission for textual similarity review to commercial plagiarism-detection software under license to the University for the detection of plagiarism. All papers submitted will be included as source documents on the reference database for the purpose of detecting plagiarism of papers subsequently submitted to the system. Use of the service is subject to the licensing agreement, currently between the University of Western Ontario and Turnitin.com (http://www.turnitin.com).

Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, in the relevant section of the Academic Handbook:
http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf
**Use of Electronic Devices:** Students may use laptops, tablet computers, or smart phones only to access the course OWL site during lectures and tutorials. Use of nonprogrammable calculators only is permitted during quizzes and examinations. No other electronic devices may be used at any time during lectures, tutorials, or examinations.

**Policy on Repeating All Components of a Course:** Students who are required to repeat an Engineering course must repeat all components of the course. No special permissions will be granted enabling a student to retain laboratory, assignment, or test marks from previous years. Previously completed assignments and laboratories cannot be resubmitted by the student for grading in subsequent years.

**Internet and Electronic Mail:** Students are responsible for regularly checking their Western e-mail and the course web site ([https://owl.uwo.ca/portal/](https://owl.uwo.ca/portal/)) and making themselves aware of any information that is posted about the course.

**Accessibility:** Please contact the course instructor if you require material in an alternate format or if any other arrangements can make this course more accessible to you. You may also wish to contact Services for Students with Disabilities (SSD) at 519-661-2111 ext. 82147 for any specific question regarding an accommodation.


Students who are in emotional/mental distress should refer to Mental Health @ Western, [http://www.health.uwo.ca/mental_health/](http://www.health.uwo.ca/mental_health/), for a complete list of options about how to obtain help.