Western University
Faculty of Engineering
Department of Electrical and Computer Engineering

ECE9608/ECE9068 - Advanced Topics in Software Engineering
Course Outline - Fall 2017

Description: Seminars on selected advanced topics related to the engineering of software are presented by the instructor, as well as by guest speakers (visitors or faculty members). Students are also required to do extensive investigation on special software engineering topics. A topic may include experimentation with a particular software tool and a methodology. The selection of the topics to be researched is made by the student in consultation with the course instructor, a faculty member or the thesis advisor, and must be approved by the instructor of this course. Students are required to attend seminars, and give one presentation (individual or pair) on approved topics.

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Academic Calendar: www.eng.uwo.ca/electrical/graduate/current_students/courses.html

Contact Hours: 3 lecture hours/week, 1 tutorial hour/week.
Course hours: Thursday, 14:30-17:30, NCB 113
Tutorial/Consultation hour: Thursday, 10:30-12:30

Anti-requisites, Pre-requisites, Co-requisites: None

Topics and Specific Learning Objectives:
Topics include, but not limited to, the following:
- Software Analytics/Software Analysis
- Big Data Software Engineering
- Predictive Analytics and Data Analytics
- Mobility and Increased Agility
- Recommendation Systems for Software Engineering
- Agile Methodology
- Software Psychology
- Visualization and Github/Gitlab
- Cloud Computing
- Social Networks and Social Media in SE
- Self-Adaptive and Self-Organizing Systems
- The Future of Open Source Software
- Emotion Awareness and Affective Computing
- Cyber-Attacks and Cyber-security
- New Trends in Software Engineering

Recommended References: ACM and IEEE Computing Journals and Magazines

Evaluation: After approval of the selected topics, students should consult the faculty members for information related to relevant journals, textbooks and manuals, how to get started, samples, information on competing tools/methodologies. Each student should hand in an article on the presented topic or a critical analysis report on the investigated tool/methodology. Students are required to submit a written essay for each attended seminar with a critical summary of each presentation in their own words. The approximate weight for each component is:

- 5% Assignment
- 25% Article on selected topics
- 15% Reviews of papers
- 15% Reviews of seminars
- 15% Presentation on selected topics
- 20% Assignment/Quiz
- 5% Class Participation

Late Submission Policy: There will be strict deadlines for the project components. Since one of the requirements of a professional engineer is on-time delivery, severe penalties are assessed for overdue submissions: penalties of 50% after one day, 100% after two or more days. There will be no rescheduling of tasks.

Use of English Policy: In the professional life of an engineer, the manner in which oral and written communications are presented is extremely important. An engineering student must develop these skills as an integral part of the undergraduate program. To encourage the student to do so, the grades assigned to written and oral work will take into account all aspects of presentation including English, conciseness, organization, neatness, use of headings, and the preparation and use of tables and figures.

Attendance Policy: Any student who, in the opinion of the instructor, is absent too frequently from class or laboratory periods in any course, will be reported to the Dean (after due warning has been given). Attendance does not mean participation. 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. The student should seek advice from the instructor or department Chair regarding how best to deal with the problem. Failure to notify the instructor 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

Cheating and Plagiarism Policy: 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; it is zero tolerance.

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). MOSS system will be used to detect program similarity.

Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, can be found at: 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 the lectures.

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, Website, e-Mail, Forums, and Bulletin Board: Students are responsible for regularly checking their Western e-mail and the course web site (https://owl.uwo.ca/portal/) and making themselves aware of any information that is posted about the course. If the student fails to act on information that has been posted on these media and does so without a legitimate explanation (i.e., medical reasons), then there are NO grounds for an appeal.

Accessibility Note: 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.

Support Services: Office of the Registrar, http://www.registrar.uwo.ca/
Student Development Centre, http://www.sdc.uwo.ca/
Engineering Undergrad Services, http://www.eng.uwo.ca/undergraduate/
USC Student Support Services, http://westernusc.ca/services/
Students who are in emotional/mental distress should refer to MentalHealth@Western, http://www.health.uwo.ca/mental_health/, for a complete list of options to obtain help.

August 25th, 2017.