The University of Western Ontario
London, Canada

Department of Computer Science

CS 4470Y - Software Maintenance and Configuration Management
Course Outline - Fall 2018

Course Description

At the core, software maintenance involves taking existing software artefacts, understanding them, and then modifying or extending the code and/or other work products associated with the software (such as design and test suites). Other aspects, such as migrating a system from one platform to another, reverse-engineering (i.e., extracting higher-level artefacts such as design from code), and inter-connecting existing systems for inter-operability, are also part of this field. It is estimated that 60-70% of the software development effort in industry is maintenance and evolution. In this course, students will get practical experience in this field, working in a team, and addressing real-world issues of third-party systems.

Software maintenance requires at least three kinds of knowledge:

- **Domain knowledge**: knowledge about the area of application of the software (e.g. mobile applications, physics simulations, processing large amounts of data, computer music, healthcare, medical equipment, social, legal, improving software development, and more).
- **Technology knowledge**: knowledge about the various software tools, languages, packages and technologies used in the software (e.g. iOS, Android, PHP, Java, application-specific technologies, etc.).
- **Code knowledge**: knowledge about the actual code, documentation, test cases and so on.

Students will acquire knowledge of all three kinds as appropriate for their projects.

Lecture Hours
Fall / Winter: Monday 11:30 - 12:30pm MC 316

Prerequisites:
Computer Science 3307A/B/Y; plus 1.5 courses from: Computer Science 3305A/B, 3331A/B, 3340A/B, 3342A/B, 3350A/B; plus registration in the Minor in Software Engineering

Note: Unless you have either the prerequisites for this course or written special permission from your Dean to enroll in it, you may 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 a course for failing to have the necessary prerequisites.

Instructor Information

One instructor will be managing and supervising the project aspects of this course:

Instructor: Nazim Madhavji
Office: MC 381

Office Hours: emails, anytime

E-Mail: madhavji <<<at>>> <geeemay l>>> <<<com>>>

Course Texts

There are no required texts for this course. To assist with project development, there are many excellent references available online. While printed books are also available from many retailers, they quickly get out of date, and so it is difficult to require you to purchase one. Guidance will be provided.

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Lectures

Lecture time will not be used for the delivery of lectures in the traditional sense. Instead, this time will be primarily used for organizing and tracking the status of project deliverables and milestones in the course. It is important to note that there may not be class held on every Monday throughout the year; further details on class scheduling will be posted on OWL.

Course Webpage and OWL

The CS4470Y webpage is accessible through the departmental website. Class and project information and announcements will be posted on OWL. You are responsible for reading this information on a regular basis.

Computing Facilities

Each student will have access to an account on the Computer Science Department senior undergraduate computing facility, GAUL. In accepting the GAUL account, a student agrees to abide by the department's Rules of Ethical Conduct.

Note: After-hours access to certain Computer Science lab rooms is by student card. If a student card is lost, a replacement card will no longer open these lab rooms, and the student must bring the new card to the Systems Group. Likewise, if a student card ceases to provide access where it should, it should be brought to the Systems Group as well.

E-Mail Contact

We will occasionally need to send e-mail messages to the whole class, or to students individually. E-Mail will be sent to the UWO e-mail address assigned to students by Information Technology Services (ITS), i.e. your e-mail address @uwo.ca. It is each student's responsibility to read this e-mail on a frequent and regular basis, or to have it forwarded to an alternative e-mail address if preferred. See the ITS website for directions on forwarding e-mail.

However, you should note that e-mail at ITS (your UWO account) and other e-mail providers may have quotas or limits on the amount of space they can use. If you let your e-mail accumulate there, your mailbox may fill up and you may lose important e-mail from your instructors. Losing e-mail that you have forwarded to an alternative e-mail address is not an excuse for not knowing about the information that was sent.

Wherever you receive e-mail, be sure to configure your spam filter to allow e-mail from the instructor's e-mail address given above. Otherwise, important messages could get trapped by your spam filter and missed. This is also not an excuse for not knowing about information that has been sent.

Student Evaluation

Grades will be based on group project work, divided across the specified set of milestones throughout the course. If for any reason the project schedule given below cannot be adhered to, the project marks will be prorated accordingly.

Accommodation and Accessibility

If you are unable to meet a course requirement due to illness or other serious circumstances, you must provide valid medical or supporting documentation to the Academic Counselling Office of your home faculty as soon as possible. If you are a Science student, the Academic Counselling Office of the Faculty of Science is located in WSC 140, and can be contacted at scibmsac@uwo.ca.

For further information, please consult the university's medical illness policy at http://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_medical.pdf.

You may also wish to contact Services for Students with Disabilities (SSD) at 661-2111 x 82147 for any specific question regarding an accommodation.

Projects

Milestones (tentative)

Milestone 1 – Progress Report 1: 15%, due October 22, 2017

Milestone 2 – Progress Report 2: 25%, due December 3, 2017
Milestone 3 – Progress Report 3: 20%, due February 25, 2018

Milestone 4 – FINAL Report and presentation: 40%, Report due April 8, 2018
                    Presentation to be scheduled.

About the Milestones

- Generally, each milestone will require the completion or progress towards a number of deliverables, as well as either oral or
- written reporting on work completed.
  Descriptions of deliverables for the project milestones will be posted on OWL.
- Any changes, updates, and clarifications to deliverables will also be posted on OWL. It is your responsibility to monitor this closely.
- Milestones will involve programming, documentation, and presentation or class discussion appropriate to the tasks at hand.
- While the project is a group project, grades will be assigned to each student based on both group and individual performance at each milestone. Individual performance will be based on a number of factors, some of which may include peer evaluations, contributions made during class, repository logs, individual reports of work completed, and so on.

Submission of Milestones

- All milestone deliverables will be submitted electronically. Details will be given in the milestone descriptions.
- Presentation related to a given project milestones will occur as scheduled and announced.
- Your project milestones are expected to be your own work. On occasion, you may be allowed to make use of code from an outside source; in such cases the source MUST be fully sited. Check with the instructor if you are uncertain about the places in which you can use code written by another person. If you use code from an outside source when you are not explicitly allowed to by the milestone description, or use a source other than what is explicitly designated in the description, you may be charged with an academic offence.

Late Submissions

- **Please note: Late milestones submissions will not be accepted. Final report and presentations will take place firmly on the scheduled date. No extensions will be possible.**

- If you have serious medical or compassionate grounds for an extension, you **must** take supporting documentation to the Academic Counselling unit of your faculty, who will contact the instructor.

Ethical Conduct

Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following Web site:
http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf.

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. Plagiarism is a major academic offence. Please note, however, that students are not allowed to make use of the work of others unless explicitly instructed to do so in the description of an assignment.

All projects are to be exclusively your own work. While project work requires you to work in teams, each team is expected to act individually. You may discuss approaches to problems among yourselves; however, the actual details of the work (coding, documentation, etc.) must be an individual effort. Incidents that are judged to be the result of academic dishonesty will be reported to the Undergraduate Chair. The selection of penalty to be applied is up to the Chair, with consultation of the instructor.

The standard departmental penalty for assignments that are judged to be the result of academic dishonesty is, for the student's first offence, a mark of zero for the assignment, with an additional penalty equal to the weight of the assignment also being applied. You are responsible for reading and respecting the Department of Computer Science's policy on Scholastic Offenses and Rules of Ethical Conduct.

The University of Western Ontario uses software for plagiarism checking. Students may be required to submit their written work and programs in electronic form for plagiarism checking.

All required papers may be subject to submission for textual similarity review to the commercial plagiarism detection software under license to the University for detection of plagiarism. All papers submitted for such checking will be included as source documents in 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/).

Accessibility Statement

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For further information, please consult the university's medical illness policy at http://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_medical.pdf.

Support Services

Please contact the course instructor if you require lecture or printed 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 661-2111 ext. 82147 if you have questions regarding accommodation.

The policy on Accommodation for Students with Disabilities can be found here:
www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_disabilities.pdf

The policy on Accommodation for Religious Holidays can be found here:
http://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_religious.pdf

Additional student-run support services are offered by the USC, http://westernusc.ca/services

The website for Registrarial Services is http://www.registrar.uwo.ca.

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