EXPANDED COURSE DESCRIPTION

ELECTRICAL ENGINEERING AND COMPUTER SCIENCE

Lassonde School of Engineering
Electrical Engineering Computer Science

LE / EECS 4090 6.0 SECTION A
SOFTWARE PROJECT
FALL 2019 / WINTER 2020

Last Modified Date: 08/07/2019

COURSE CALENDAR DESCRIPTION

Large-scale project involving all stages of the software development life cycle: requirements, analysis and design, implementation, testing and delivery. Team work. Open only to students in the Software Development Stream. Prerequisites: LE/EECS 3311 3.00 (with minimum grade of B), LE/EECS 3101 3.00, LE/EECS 3342 3.00. Corequisites: LE/EECS 4312 3.00, LE/EECS 4313 3.00.

INSTRUCTOR(S)

<table>
<thead>
<tr>
<th>Name</th>
<th>Section / Format / Term</th>
<th>Contact Email</th>
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<tbody>
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ADDITIONAL INFORMATION

COURSE CALENDAR DESCRIPTION

A well-designed software product is more than just a computer program. A software product consists of quality code, a well thought out design developed via disciplined professional engineering standards, appropriate literate documentation including requirements, design and testing documents, a manual, and the appropriate installation files and instructions needed to get the product to work. The product has to be correct (i.e. it must satisfy all the requirements specified by the client), usable, efficient, safe and maintainable.

The goal of this course is to provide students with an opportunity to integrate what they have learned in earlier computer science courses, deepen their understanding of that material, extend their area of knowledge, and apply their knowledge and skills in a realistic simulation of professional experience. The end result must be a substantial software product.

This course is run on a tight schedule over the Fall and Winter Terms; work is ongoing and regular. The course is intended to help with the transition from being a student to being an active professional in industry. During the course students are expected to perform independent study, plan their work, make decisions, and take ownership of the consequences of their mistakes.

A combination of teamwork and individual work is required. The requirements elicitation, requirements analysis, design, coding, testing, and implementation of the product will be a team effort. However, individual responsibilities must be clearly identified in every deliverable.

This project will be of significant size and like most industrial projects it will be time and resource limited. Students must meet the specified deadlines. As a result, they will have to set their goals and plan their work accordingly.

Students must apply sound mathematics, good engineering design, and algorithms throughout the project. However, they will also need to apply heuristics and design patterns, or “rules of thumb”, where sound, well-understood algorithms are not available. Any such heuristics must be clearly identified and supported by arguments that justify their choice. The teams will be required to show that the heuristic cannot fail in a way that will violate safety restrictions or other restrictions designated as critical.

Students who have a project they wish to do need to convince a member of the faculty in the Department that it is appropriate for course credit and have them agree to be their supervisor. Alternatively, students may
approach a faculty member (typically, one who is teaching or doing research in the area of the project) and ask for project suggestions.

Whatever the origin of the project, a “contract” is required. It must state the scope of the project, the schedule of work, the resources required, and the criteria for evaluation. The contract must be signed by the student and his/her project supervisor and be acceptable to the course director.

The course coordinator, student and supervising faculty member should each retain a copy of the agreed-upon description of the course, and relevant details should be entered into the student’s record via the student information system (SIS).

A critical course component that must be included in the contract is a formal seminar presentation. The course director will arrange the seminar sessions, and students and their faculty supervisors are required to participate. The seminar talks will have a typical length of 15-20 minutes, and will be evaluated by the individual supervisor, the course director and one more faculty member. This talk will be worth 30% of the final mark. The remaining 70% of the course mark is the responsibility of the individual supervisor.

ADDITIONAL INFORMATION

Link to project contract template:

COURSE LEARNING OUTCOMES

Each project contract must include 3-5 course learning outcomes, specific to the project and mutually developed by the student and supervisor, to be approved by the course director.

EVALUATION SCHEME

Final Presentation: 30%
Course work according to approved contract: 70%

ACADEMIC INTEGRITY LINKS

• Senate Policy on Academic Honesty - http://secretariat-policies.info.yorku.ca/policies/academic-honesty-senate-policy-on/
• Academic Integrity - http://lassonde.yorku.ca/academic-integrity

STUDENT LINKS

• Student Rights and Responsibilities - http://oscr.students.uit.yorku.ca/student-conduct
• Religious Observance - https://w2prod.sis.yorku.ca/Apps/WebObjects/cdm.woa/wa/regobs
• Academic Accommodation for Students with Disabilities - http://secretariat-policies.info.yorku.ca/policies/academic-accommodation-for-students-with-disabilities-policy/
• Student Accessibility Services (SAS) - https://accessibility.students.yorku.ca/
• York University’s Policies on Sexual Violence - http://secretariat-policies.info.yorku.ca/policies/sexual-violence-policy-on/
• York University’s Policies on Gender/LGBTQ*/Positive Space - http://rights.info.yorku.ca/lgbtq/

LAND ACKNOWLEDGEMENT

• We acknowledge our presence on the traditional territory of many Indigenous Nations. The area known as Tkaronto has been care taken by the Anishinabek Nation, the Haudenosaunee Confederacy, the Huron-Wendat, and the Métis. It is now home to many Indigenous Peoples. We acknowledge the current treaty holders, the Mississaugas of the New Credit First Nation. This territory is subject of the Dish With One Spoon Wampum Belt Covenant, an agreement to peaceably share and care for the Great Lakes region.
The Indigenous Framework for York University: A Guide to Action can be found here: http://indigenous.info.yorku.ca/

Meaning of a land acknowledgement: http://healthydebate.ca/opinions/indigenous-land-acknowledgements

Many courses utilize Moodle, York University’s course website system. If your course is using Moodle, click here to access it.

Moodle @ York University