EXPANDED COURSE DESCRIPTION
ELECTRICAL ENGINEERING AND COMPUTER SCIENCE
Lassonde School of Engineering
Electrical Engineering Computer Science
LE / EECS 4315 3.0 SECTION Z
MISSION-CRITICAL SYSTEMS
FALL 2019 / WINTER 2020

Last Modified Date: 08/06/2019

COURSE CALENDAR DESCRIPTION

Theory and practical tools underlying deductive and algorithmic methods for ensuring the safety and correctness of mission critical systems (e.g. medical systems, nuclear reactors and train systems) with the practical ability to use verification tools to perform software certification. Prerequisites: cumulative GPA of 4.50 or better over all major EECS courses (without second digit "5"); LE/EECS 2030 3.00 or LE/EECS 1030 3.00; LE/EECS 3342 3.00.

INSTRUCTOR(S)

<table>
<thead>
<tr>
<th>Name</th>
<th>Section / Format / Term</th>
<th>Contact Email</th>
<th>Contact Phone</th>
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</thead>
<tbody>
<tr>
<td>van Breugel, Franck</td>
<td>Sec. Z / LECT / W</td>
<td><a href="mailto:franck@eeecs.yorku.ca">franck@eeecs.yorku.ca</a></td>
<td>416-736-2100 Ext. 77880</td>
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ADDITIONAL INFORMATION

COURSE LEARNING OUTCOMES

• The ability to explain the importance of safety-, mission-, business-, and security-critical systems.
• Demonstrated knowledge of the importance of good software engineering practices for critical systems.
• The ability to use rigorous software engineering methods to develop dependable software applications that are accompanied by certification evidence for their safety and correctness.
• Knowledge of the method and tools using deductive approaches (such as theorem proving).
• Knowledge of methods and tools for algorithmic approaches (such as model checking, bounded satisfiability) etc.
• Knowledge of the theory underlying deductive and algorithmic approaches.
• The ability to use industrial strength tools associated with the methods on large systems.

TEXTBOOK


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