The objective of this course is to provide the student with an introduction to systems engineering with an emphasis on the following topics: the systems engineering process, requirements, design fundamentals, subsystem fundamentals, trade studies, integration, technical reviews, and case studies. The course is also intended to prepare the student for the payload/mission design courses (LE/ESSE 4360 3.00 and LE/ESSE 4361 3.00) which are more application oriented.

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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<tbody>
<tr>
<td>Newland, Franz T.</td>
<td>Sec. M / LECT / W</td>
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ADDITIONAL INFORMATION

COURSE LEARNING OBJECTIVES

(1) Brief statement of the purpose:
This course provides the opportunity to perform the activities of a systems engineer in a preliminary space mission design phase. Students must select a mission of their choice, in teams, and then work through defining system requirements and performing preliminary system design activities to demonstrate system design feasibility.

(2) Brief list of specific learning outcomes of the course:
By the end of the course, participants should have acquired and demonstrated:
1. Explain the systems engineering process in the context of space engineering
2. Identify the importance of this methodology to successful engineering projects
3. Clearly communicate engineering tasks and constraints
4. Demonstrate an working knowledge of the tools and metrologies of space systems engineering

COURSE TEXT/READINGS

Recommended texts:
• “Spacecraft Systems Engineering”, 4th Edition Peter Fortescue (Editor), Graham Swinerd (Editor), John Stark (Editor) September 2011.

Additional readings may be assigned or recommended during the course.

COURSE EVALUATION

• 10% of grade is based on participation
• 20% of grade is based on individual assignments
• 10% of grade is based on developmental group presentations/assignments
• 10% of grade is based on group final presentation
• 25% of grade is based on group final report
• 25% of grade is based on a final exam.

**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/reqobs
• 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

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

**Moodle @ York University**