EXPANDED COURSE DESCRIPTION
EARTH, SPACE SCIENCE AND ENGINEERING
Lassonde School of Engineering
Earth and Space Science and Engineering
LE / ESSE 2360 3.0 SECTION A
SPACE ENGINEERING
FALL 2018 / WINTER 2019

An introduction and overview of space engineering. Space engineering activities are surveyed by segment and by sub-discipline and key concepts are introduced. The skillsets required of space engineers are investigated. Written and oral technical communication skills are emphasized. The topics discussed in the course provide the fundamentals of all aspects of space engineering as a profession and includes illustrative examples and discussions with practicing space engineers in the field. Prerequisites: LE/ENG 1101 4.00 and LE/ENG 1102 4.00 or permission of the Instructor.

INSTRUCTOR(S)

<table>
<thead>
<tr>
<th>Name</th>
<th>Section / Format / Term</th>
<th>Contact Email</th>
<th>Contact Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newland, Franz T.</td>
<td>Sec. A / LECT / F</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ADDITIONAL INFORMATION

COURSE OBJECTIVES

(1) Brief statement of the purpose:

- This course provides an introduction and overview to space engineering, and develops communication skills for engineers:
  - Space engineering activities are surveyed by segment and by sub-discipline, and key concepts are introduced.
  - The skillsets required of space engineers are investigated.
  - Textual, visual and oral technical communication skills are explored in a number of formats.

  The topics discussed in the course provide the fundamentals of many aspects of space engineering as a profession and include illustrative examples and discussions with practicing space engineers in the field. This introduction is given in a manner to emphasize student communication skills, with regards to listening, reading, writing and speaking in different technical contexts for different purposes.

(2) Brief list of specific learning outcomes of the course:

1. Describe current space activities in Canada and internationally
2. Contextualize particular missions and space developments compared to the state of the art
3. Apply key concepts in space engineering to the design of space elements
4. Identify the skillsets required for particular space segment activities
5. Classify missions by application and subject
6. Develop simple quality engineering processes appropriate for space use
7. Specify simple quantitative orbital and navigation system parameters based on requirements
8. Operate ground segment equipment to test simple spacecraft command interfaces
9. Clearly communicate technical concepts both orally and in written form

COURSE TEXTS/READINGS
Recommended texts:
Additional readings will be assigned or recommended during the course.

COURSE EVALUATION
The final grade for the course will be based on the following items weighted as indicated:
• Group oral presentation (once, between week 3 and week 11): 10%
• Individual tutorial assignments in weeks 5, 10, 13: 10% each
• Individual reports: 10% for written version, 5% for video version
• Group written report: 10%
• Individual peer feedback exercises: 15%, spread across all group oral presentations
• Final exam: 10%

Note – TurnItIn will be available for this course – you will be able to submit your reports to TurnItIn to determine if you have cited material correctly. We will have access to the TurnItIn reports, after marking your work, to check for any plagiarism issues. If you wish to opt out of TurnItIn per York’s “text matching” guidelines, do let me know as soon as possible.

Note – this evaluation, available at the start of the semester, complies with the Senate Grading Scheme and Feedback Policy, which stipulates that (a) the grading scheme (i.e. kinds and weights of assignments, essays, exams, etc.) be announced, and be available in writing, within the first two weeks of class, and that, (b) under normal circumstances, graded feedback worth at least 15% of the final grade for Fall, Winter or Summer Term, and 30% for ‘full year’ courses offered in the Fall/Winter Term be received by students in all courses prior to the final withdrawal date from a course without receiving a grade (see the policy for exceptions to this aspect of the policy - http://secretariat-policies.info.yorku.ca/policies/grading-scheme-and-feedback-policy/)

Grading, Assignment Submission, Lateness Penalties and Missed Tests

Grading: The grading scheme for the course conforms to the 9-point grading system used in undergraduate programs at York (e.g., A+ = 9, A = 8, B+ = 7, C+ = 5, etc.). Assignments and tests will bear either a letter grade designation or a corresponding number grade (e.g. A+ = 90 to 100, A = 80 to 90, B+ = 75 to 79, etc.) (For a full description of York grading system see the York University Undergraduate Calendar - http://calendars.registrar.yorku.ca/2010-2011/academic/index.htm. Final course grades may be adjusted to conform to Program or Faculty grades distribution profiles

Note this course complies with the senate policy stipulating that no examinations or tests collectively worth more than 20% of the final grade in a course will be given during the final 14 calendar days of classes in a term.

Assignment Submission: Proper academic performance depends on students doing their work not only well, but on time. Accordingly, assignments for this course must be received on the due date specified for the assignment.

Lateness Penalty: Assignments received later than the due date will be penalized one grade point per day the assignment is late. Exceptions to the lateness penalty for valid reasons such as illness, compassionate grounds, etc., may be entertained by the Course Instructor but will require supporting documentation (acceptable documentation for illness consists of the York Attending Physician’s Statement, available here: http://www.registrar.yorku.ca/pdf/attending-physicians-statement.pdf)

Missed Tests: Students with a documented reason for missing a course test, such as illness, compassionate grounds, etc., which is confirmed by supporting documentation (e.g., Attending Physician’s Statement) may request accommodation from the Course Instructor. Further extensions or accommodation will require
students to submit a formal petition to the Faculty.

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/
• Counselling and Disability Services - http://cds.info.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