EXPANDED COURSE DESCRIPTION
EARTH, SPACE SCIENCE AND ENGINEERING
Lassonde School of Engineering
Earth and Space Science and Engineering
LE / ESSE 3630 3.0 SECTION M
ANALYSIS OF OVERDETERMINED SYSTEMS
FALL 2017 / WINTER 2018

Last Modified Date: 08/18/2017

COURSE CALENDAR DESCRIPTION
Hilbert space and statistics. Statistical testing and assessment of observations, parameters and mathematical models. Optimal design. Generalized adjustment, problems with constraints and singularities, step-by-step procedures, Kalman filtering, least-squares collocation. Three lecture hours and one and a half hours of laboratory exercises per week. One term. three credits. Prerequisites: AP/SC/GEOG 2420 3.00, LE/ESSE 3610 3.00, LE/ESSE 3620 3.00. Prior to Fall 2014: Prerequisites: AP/SC/GEOG 2420 3.00, LE/EATS 3610 4.00 or LE/ENG 3110 4.00, LE/EATS 3620 4.00 or LE/ENG 3120 4.00. Prior to Summer 2013: Prerequisites: AP/SC/GEOG 2420 3.00, SC/EATS 3610 4.00 or SC/ENG 3110 4.00, SC/EATS 3620 4.00 or SC/ENG 3120 4.00. Prior to Fall 2009: Prerequisites: AS/SC/GEOG 2420 3.00, SC/EATS 3610 4.00 or SC/ENG 3110 4.00, SC/EATS 3620 4.00 or SC/ENG 3120 4.00.

INSTRUCTOR(S)

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<tr>
<th>Name</th>
<th>Section / Format / Term</th>
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<td>Hu, Baoxin</td>
<td>Sec. M / LECT / W</td>
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TOPICS AND CONCEPTS
Content:
- Adjustment with the weighted least squares
- Generalised adjustment
- Statistical tests and their applications for assessment of least-squares solutions
- Optimal accuracy design
- Least-squares problems with constraints and singularities.
- Basis of sequential adjustment technique and Kalman filter.

GRADED ASSESSMENT
Evaluation:
Lab assignments: 30%
Mid-term: 15%
Quizzes: 10%
Participation: 5%
Final exam: 40%

ADDITIONAL INFORMATION
Texts:

Suggested Bibliography:

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/

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