EXPANDED COURSE DESCRIPTION

EARTH, SPACE SCIENCE AND ENGINEERING

Lassonde School of Engineering
Earth and Space Science and Engineering
LE / ESSE 2635 3.0 SECTION A
SURVEYING FOR CIVIL ENGINEERS
FALL 2019 / WINTER 2020

Last Modified Date: 08/07/2019

COURSE CALENDAR DESCRIPTION

This course provides fundamental concepts in land surveying where students obtain extensive hands-on experience in the use of land surveying instruments and in the essentials of survey practice in Civil Engineering domain. Coordinates systems, positioning concepts, measurements of distances, angles and leveling, survey calculations, Global Navigation Satellite Systems (GNSS) measurements, horizontal and vertical control survey networks, sources of error, and corrections and adjustments are introduced. Application exercises include use of geodetic instruments, point positioning, topographic mapping, route surveys, and construction surveying. Concepts of various geomatics positioning techniques such as photogrammetry, Remote Sensing (RS), Laser scanning (e.g. lidar) and global navigation satellite systems (GNSS) as well as the use Geographic Information Systems (GIS) systems are also covered. Prerequisite: ESSE1012 3.00; MATH 2930 3.00; CIVL 2150 3.00.

This course provides fundamental concepts in land surveying for civil engineering students focusing on extensive hands-on experience in the use of land surveying instruments and in the essentials of survey practice in Civil Engineering fields. Topics include coordinates systems, positioning concepts, measurements of distances, angles and leveling, survey calculations, Global Navigation Satellite Systems (GNSS), horizontal and vertical control survey networks, and error corrections. Geomatics disciplines such as photogrammetry, Remote Sensing (RS), Laser scanning (e.g. lidar) and global navigation satellite systems (GNSS) and Geographic Information Systems (GIS) systems are introduced.

INSTRUCTOR(S)

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<th>Name</th>
<th>Section / Format / Term</th>
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<tr>
<td>Jadidi Mardkheh, Amaneh</td>
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ADDITIONAL INFORMATION

COURSE LEARNING OUTCOMES

CLO 1: Explain positioning and land surveying concepts; and perform basic surveying techniques.

CLO 2: Demonstrate knowledge of surveying instruments and data acquisition (total station, level, GNSS and tape).

CLO 3: Establish horizontal and vertical control surveys and conduct error analysis.

CLO 4: Design, plan, organize and schedule construction and topographic surveying; and, ensure field safety.

CLO 5: Conduct topographic, mapping, construction route surveying.

CLO 6: Demonstrate knowledge of GIS, Remote sensing, photogrammetry, and Lidar technologies.

GRADING BREAKDOWN

Field Work (30%) and Final Project (10%) - 40%
Participation - 10%
Assignment (4x2.5%) - 10%
Final examination - 40%

COURSE TEXTS

Required:

Suggested:

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