EXPANDED COURSE DESCRIPTION
CIVIL ENGINEERING
Lassonde School of Engineering
Civil Engineering
LE / CIVL 3220 3.0 SECTION M
HYDROLOGY
FALL 2018 / WINTER 2019

Last Modified Date: 08/20/2018

COURSE CALENDAR DESCRIPTION

The course introduces basic hydrological processes such as precipitation and abstractions. It also covers engineering applications such as statistical hydrology, regional frequency analysis, water balance methods, the unit hydrograph and rainfall-runoff processes, flow routing techniques, and urban hydrology.
Prerequisites: SC/MATH 2930 3.00; LE/CIVL 2210 4.00.

INSTRUCTOR(S)

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<tr>
<th>Name</th>
<th>Section / Format / Term</th>
<th>Contact Email</th>
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<tr>
<td>Khan, Usman T.</td>
<td>Sec. M / LECT / W</td>
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ADDITIONAL INFORMATION

The objective of this course is to introduce the student to hydrology as it pertains to Civil Engineering applications through the use of lectures, laboratory and tutorial sessions.

Topics that will be covered in this course will include:
1. Statistical hydrology (including Frequency Analysis)
2. Streamflow processes
3. Rainfall
4. Abstraction
5. Hydrological cycle
6. Rainfall-runoff analysis
7. Flow routing
8. Urban hydrology

The course includes tutorial sessions (total 12 hours over the duration of the course). The tutorials will involve individual and group problem-solving activities that coincide with materials being taught and enhances the student’s understanding of the subject.

COURSE LEARNING OBJECTIVES

The objective of the course is to familiarize students with basic hydrology and hydrological engineering concepts, including a thorough understanding of the hydrological cycle, streamflow processes, water budget, and rainfall and abstractions. Students will learn to apply statistical methods for regional frequency analysis, use intensity-duration-frequency curves, the unit hydrograph, use flow routing techniques. The course will build on the knowledge gained in LE/CIVL 2210 (Fluid Mechanics) and apply knowledge from SC/MATH 2930 (Statistics and Probability for Engineers).

COURSE LEARNING OUTCOMES

By the end of this course, students will be able to:
1. Understand the different hydrologic and streamflow processes and factors that control them
2. Identify different techniques for measuring hydrologic quantities
3. Apply water budget techniques at the watershed scale
4. Understand the concept of a unit hydrograph and use it for rainfall-runoff analysis
5. Use statistical methods to determine hydrological quantities and for regional frequency analysis
6. Apply flow routing techniques to solve engineering problems

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