



**CAMOSUN COLLEGE**  
**School of Trades and Technology**  
**Department of Civil Engineering Technology**

**CIVE 276 – HYDROLOGY**  
**F2019**

**COURSE OUTLINE**

**1 Instructor Information**

Instructor	Robin Ley
Office hours	See office
Location	TECH, Room 174
E-mail	<a href="mailto:LeyR@camosun.bc.ca">LeyR@camosun.bc.ca</a>
Website	<a href="http://civil.camosun.bc.ca/student/">http://civil.camosun.bc.ca/student/</a>

**2 Calendar Description**

Students learn to design appropriate piping and structures for handling rainwater. Students learn to predict storm flow rates by interpreting a contour map, evaluating a catchment, and applying historical rainfall data. The effects of land development on riparian systems are discussed and best practices for mitigating downstream effects are compared.

**3 Prerequisites and Co-requisites**

One of:

C in Pre-calculus 12

C in Principles of Math 12

C in MATH 107

C in MATH 115

**4 Intended Learning Outcomes** - Upon successful completion of this course, students will be able to:

Discuss:

- The hydrologic cycle and the value of fresh water as a resource;
- The role civil engineering plays in hydrologic systems; and
- The effects of land development on downstream riparian systems.

Evaluate:

- Topographic maps to determine surface runoff catchment boundaries, flow paths and runoff velocities;
- Storm water runoff rates using various commonly used methods and appropriate structures for handling storm water; and
- The effects of snow pack and snow melt on surface runoff rates.

Construct

- Topographic maps from a 3D model;

- Hyetographs and hydrographs using commonly applied methods; and
- Spreadsheets and graphs for determining the required storage volume of a detention pond, layout and flow-control outlet structure.

Compare:

- Rainfall intensities, patterns, durations for differing regions and return periods;
- The applications and limitations of various common methods for calculating storm water runoff rates;
- The effects of development on a storm hydrograph before and after a detention pond;
- The changes in approach to storm water management in the last 80+ years; and
- Best management practices for stormwater management.

## 5 Required Materials

CIVE 276 Course Notes – 2012 (edited 2019) by Z. Broom and P. Fell, Camosun College Civil Engineering Dept. (can be found on website, Camosun printshop and remote printshop have final version for printing). No electronics besides calculators will be permitted in exams. Students are advised to print out notes for use during class and exams. Notes will be supplemented in class. Power point slides will be used from time to time but may not made available after class. Students should make notes during class.

## 6 Course Content and Schedule (check website for up to date schedule)

Week	Week Starting (Monday)	Lecture 1 (Tuesdays 3:30 - 4:50)	Lecture 2 (Fridays 2:00 – 3:20)	Assignments Due (due at the beginning of Lecture 2 period unless otherwise noted)
1	02-Sep	Introduction to Hydrology, Course Content, Water Cycle	Case Study	
2	9-Sep	Precipitation (ROT, Rainfall Type, Extreme Events)	Precipitation and Statistics	<i>Assignment 1 Due</i>
3	16-Sep	Time of Concentration, Catchbasins	Time of Concentration, Catchbasins, Velocities (Cont.)	
4	23-Sep	Pipe Sizing	Pipe Sizing	<i>Assignment 2 Due</i>
5	30-Sep	Culvert Sizing	Culvert Sizing	
6	07-Oct	Intro to Rational Method	Rational Method	<i>Assignment 3 Due</i>
7	14-Oct	Midterm Exam Review	<b>Midterm (Oct. 18<sup>th</sup>)</b>	
8	21-Oct	SCS Method	SCS Method	
9	28-Oct	Cedar Hill Development Assignment	Cedar Hill Development Assignment	<i>Assignment 4 Due</i>
10	04-Nov	Design for Detention	Design for Detention	
11	11-Nov	Modern Stormwater Design, BMPs	Raingarden Design	<i>Assignment 5 Due</i>
12	18-Nov	BMP Design	Stream Restoration	
13	25-Nov	Watershed Management	Snowmelt	<i>Assignment 6 Due</i>
14	02-Dec	Review	Review	

## 7 Student Assessment

<i>Component</i>	<i>Weighting</i>	<i>Comments</i>
Assignments	30%	6 assignments at 5% each
Mid-term Exam	25%	Exam will be open notes
Quizzes	5%	5 quizzes (attendance is included in this grade)
Final Exam	40%	Exam will be open notes

## 8 Grading System

- Standard Grading System (GPA)*  
 *Competency Based Grading System*

See [Camosun Grading Policy E-1.5](#)

## 9 Class Policies

- Assignments are due at the start of the applicable lecture.
- No late assignments will be accepted without a prior approved academic concession.
- A weighted average of 50% must be attained on all tests / examinations and an average of 50% must be attained on the Final Exam in order to pass the course.
- Full attendance in lectures is expected. A portion of the in-class presentation grade will include attendance.
- Midterm and Final exam will be open notes.