



Course Descriptor

CVEN552–ENGINEERING HYDROLOGY

Proposed Academic Year	2020-2021	Last Reviewed Academic Year	Fall 2020
Course Code	CVEN552	Course Title	Engineering Hydrology
Credit hours	3	Level of study	4 th Year
College / Centre	COE	Department	Civil and Environmental
Co-requisites	None	Pre-requisites	None

1. COURSE OUTLINE

Introduction to surface and groundwater hydrology, hydrologic cycle, hydrograph statistics, hydrologic design, design storm, modeling of aquifer system. Urban storm-water drainage, flood damage mitigation and seawater intrusion in coastal aquifers.

2. AIMS

[Understand the basics of hydrology and the hydrologic laws and principles governing water flow and storage for water resources engineering design

3. LEARNING OUTCOMES, TEACHING, LEARNING and ASSESSMENT METHODS

Learning Outcomes (Definitive)	Teaching and Learning methods (Indicative)	Assessment (Indicative)
Upon successful completion of this course, students will be able to:		
1. Understand the basics of hydrology	Lectures	Assignments and in-class tests
2. Delineate a watershed; Determine the amount of runoff for a given watershed	Lectures	Assignments and in-class tests
3. Understand how water flows both above and below ground	Lectures	Assignments and in-class tests
4. Design a hydrologic structure to meet storm and runoff requirements	Lectures	Assignments and in-class tests

4. ASSESSMENT WEIGHTING

Assessment	Percentage of final mark (%)
Assignments	20%
Quizzes	
etc	
etc	
Mid-term Examination, two	40%
Final Examination	40%
TOTAL	100%



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5. ACHIEVING A PASS

Students will achieve **3** credit hours for this course by passing **ALL** of the course assessments and achieving a **minimum overall score of 50%**

NB *Ensure that ALL learning outcomes are taken into account

6. COURSE CONTENT (Indicative)

Introduction to hydrology	
Precipitation, interception, evaporation, and infiltration	
Hydrologic data and measurements	
Surface water, hydrographs, and the rational method	
Surface water, hydrographs, and the rational method (Cont.)	
Unit hydrographs	
Hydrologic design	
Lab Experiment (Sediment transport)	
Frequency analysis	
Frequency analysis (Cont.)	
Groundwater hydrology	
Flow to wells	
Urban hydrology	
TOTAL HOURS	45
Plus RECOMMENDED INDEPENDENT STUDY HOURS	90
TOTAL COURSE HOURS	135

7. RECOMMENDED READING

Core text/s:

Viessman, W. and Lewis, G. (2003). *Introduction to Hydrology*. Prentice Hall, Fifth Edition.



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Library + online resources:

Nigel, A. (2014). *Hydrology and Global Environmental Change*, Routledge, London,
<https://www.masader.om/eds/detail?db=e000xww&an=862027&isbn=9781317878230>

Joel, G. (2010) *Isotope Hydrology: A Study of The Water Cycle*, Imperial College Press, London.
<https://www.masader.om/eds/detail?db=e000xww&an=340684&isbn=9781848164741>