



## Course Descriptor

CVEN564– Coastal Engineering

<b>ACADEMIC YEAR</b>	2019-2020	<b>SEMESTER</b>	Fall 2020
<b>Course Code</b>	CVEN564	<b>Course Title</b>	Coastal Engineering
<b>Credit hours</b>	3	<b>Level of study</b>	Fourth year
<b>College / Centre</b>	Engineering	<b>Department</b>	CVEN
<b>Co-requisites</b>	None	<b>Pre-requisites</b>	CVEN451 Hydraulics Engineering

### 1. COURSE OUTLINE

Applications of coastal engineering for design of Coastal structures. Introduction to coastal and harbor engineering and improving the knowledge of physical processes and the theory of waves, tides and sediment transport in coastal area.

### 2. AIMS

[The course aim to provide fundamental concepts of coastal engineering to solve problems encountered in coastal area and determine sea parameters like wave height, wave period, and water levels. In addition, it helps to understand wave properties, how they differ in the coastal zones and how sediments are transported with the influence of waves and current.

### 3. LEARNING OUTCOMES, TEACHING, LEARNING and ASSESSMENT METHODS

<b>Learning Outcomes (Definitive)</b>	<b>Teaching and Learning methods (Indicative)</b>	<b>Assessment (Indicative)</b>
Upon successful completion of this course, students will be able to:		
1. Understand impacts of ocean waves on the way to the coast	Lectures, Tutorials, Laboratory classes	Written assignments, in-class tests and oral presentations
2. Interactions between waves, currents and sediment transport	Lectures, Tutorials, Laboratory classes	Written assignments, in-class tests and oral presentations
3. Changes of water-level beside the coasts	Lectures, Tutorials, Laboratory classes	Written assignments, in-class tests and oral presentations
4.		

### 4. ASSESSMENT WEIGHTING

<b>Assessment</b>	<b>Percentage of final mark (%)</b>
Assignments	20%
Quizzes	
Mid-term Examination I	20%
Mid-term Examination II	20%
Final Examination	40%
<b>TOTAL</b>	<b>100%</b>



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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)

WEEK	LECTURE TOPIC	TIME (HOURS)
1	Introduction to costal Engineering	3
2	The theory of periodic waves	3
3	Wave Energy	3
4	Wave refraction	3
5	Wave diffraction	3
6	Wave reflection	3
7	Wind and Tides	3
8	Tides and Currents	3
9	Impact of Wave forces on offshore structures	3
10	Wave and marine structure interaction	3
11	Design of marine and coastal structures	3
12	Design of marine and coastal structures	3
13	Coastal sediment transport	3
14	Coastal barriers	3
15	Course review	3
	<b>TOTAL HOURS</b>	<b>45</b>
1 - 15	Plus <b>RECOMMENDED INDEPENDENT STUDY HOURS</b>	<b>90</b>
	<b>TOTAL COURSE HOURS</b>	<b>135</b>

### 7. RECOMMENDED READING

#### Core text/s:

Masselink, G., Hughes, M., & Knight, J. (2014). Introduction to coastal processes and geomorphology. Routledge

Sorensen, R. M. (2005). *Basic coastal engineering* (Vol. 10). Springer Science & Business Media.



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### Library + online resources:

[Various resources](#)