

## Faculty of Engineering & Technology

### Design of Coastal Protection Works

#### Information :

**Course Code :** SCM 532

**Level :** Undergraduate

**Course Hours :** 3.00- Hours

**Department :** Department of Structural Engineering & Construction Management

#### Area Of Study :

Upon successful completion of this course, the student should be able to:

- Understand the basic concepts and main principles
- Calculate the values of the essential terms

Regarding hydrodynamics of coastal areas Shoreline changes & erosion hore protection structures off-shore marine structures marine pipelines and cables construction methods & materials environmental impact

#### Description :

Introduction, Hydrodynamics of coastal areas, Sediment transport, Shoreline changes, Beach erosion, Design of shore

protection structures: marine walls, groins, breakwaters, Off-shore marine structures, Floating structures, Design of non structural beach protection systems, Design of marine pipelines and cables, Selection of construction methods and type of materials, Environmental impact assessment.

#### Course outcomes :

##### a.Knowledge and Understanding: :

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|-----|---|
| 1 - | Describe the main concept of hydrodynamics of coastal areas |
| 2 - | Explain the principals of Shoreline changes & erosion       |

##### b.Intellectual Skills: :

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|-----|--|
| 1 - | Calculate the values of hore protection structures |
| 2 - | Analyze the system of off-shore marine structures  |
| 3 - | Analyze the system of marine pipelines and cables  |
| 4 - | Assess issues of construction methods & materials  |

##### c.Professional and Practical Skills: :

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|-----|---|
| 1 - | Draw neat details of hore protection structures                     |
| 2 - | Apply Code provisions regarding off-shore marine structures         |
| 3 - | Apply Code provisions regarding marine pipelines and cables         |
| 4 - | Demonstrate presentation regarding construction methods & materials |
| 5 - | Prepare technical reports for environmental impact                  |

##### d.General and Transferable Skills: :

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| 1 - | Search for information and self-learning discipline |
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### **Course Topic And Contents :**

Topic	No. of hours	Lecture	Tutorial / Practical
Hydrodynamics of coastal areas	4	3	1
Shoreline changes & erosion	8	6	2
Shore protection structures	12	9	3
Off-shore marine structures	12	9	3
Marine pipelines and cables	8	6	2
Construction methods & materials	8	6	2
Environmental impact	4	3	1
Revision	4	3	1

### **Teaching And Learning Methodologies :**

Interactive Lec.  
Discussion  
Problem Solving  
Report / Present.

### **Course Assessment :**

Methods of assessment	Relative weight %	Week No	Assess What
Final exam	40.00		
First Mid Term Exam	15.00		
Quizzes / Assig.	15.00		
Report / Present.	15.00		
Second Mid Term Exam	15.00		

### **Course Notes :**

Handout notes on MOODLE

### **Recommended books :**

"Coastal Engineering . Waves, Beaches, Wave-Structure Interactions", T. Sawaragi , Elsevier, 1995