

**CB485 Design & Construction Of Coastal Struc.**

**COURSE INFORMATION**

Prerequisites	Academic Year & Level		Teaching Methods			Credit Hrs.
	Year	Semester	Lecture	Tutorial	Laborator y	
CB281	4	8	2	2	0	3

**COURSE AIM**

The course aims at acquainting the student of construction engineering to the knowledge of fundamental and methods of designing coastal protection structures and shoreline facilities. Further the course introduces the students to the principles of coastal zone management and construction aspects of major structures.

**COURSE WEEKLY CONTENTS**

- 1 Introduction to coastal engineering; environment and types of coastal structures.
- 2 Wind, tide, currents and surface wave hydrodynamics; elementary and finite amplitude waves
- 3 Wind, tide, currents and surface wave hydrodynamics; elementary and finite amplitude waves
- 4 Wind generated waves; prediction and forecast.
- 5 Modification of wave characteristics in shoaling waters and sea level changes.
- 6 Coastal processes and sediment transport (erosion and accretion).
- 7 Introduction to coastal zone management and sustainability of coastal projects. + Midterm Exam
- 8 Wind and wave-current hydrodynamic forces.
- 9 Wind and wave-current hydrodynamic forces.
- 10 Introduction to port and harbor planning and offshore terminals.
- 11 Port and Harbor facilities; breakwaters, piers and terminals etc.
- 12 Design and construction of breakwaters, seawalls and groins (rigid/ flexible).
- 13 Design and construction of breakwaters, seawalls and groins (rigid/ flexible).
- 14 Marine construction: methods, materials and equipment.
- 15 Environmental effects on coastal zone management; e.g.: Effects of sea level rise

**STUDENT GRADING & ASSESSMENT**

Weeks	Exams	Assign.	Quizzes	Reports	Present.	Lab.	Total
1 to 7	20 Midterm	←	10	MARKS		→	30
To be freely distributed among possible assessments							
8 to 12	←		20	MARKS		→	20
13 to 15	←		10	MARKS		→	10
16 or 17	40 Final						40
<b>Total</b>	<b>Exams</b>	<b>Assign.</b>	<b>Quizzes</b>	<b>Reports</b>	<b>Present.</b>	<b>Lab.</b>	<b>100</b>

REFERENCES

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- Textbook** Introduction to Coastal Engineering and Management by J.W. Kamphuis  
Publisher: World Scientific Publishing, 2001.
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- Other** Coastal Defense-ICE design and practice guide by Brampton Publisher:  
Thomas-Telford, London, 2002.  
Hydraulics in Civil and Environmental Engineering by A. Chadwick and A.J.  
Morfett, Spon Publisher: London, New York, 2002.  
Coastal Engineering-processes, theory and design practice by D. Reeve, A.  
Chadwick and C. Fleming, Spon Publisher: Press, London and New York,  
2004.  
Port Engineering by Per Bruun, Gulf Publishing Co. Publisher: Houston, USA,  
1981.  
Construction Risk in Coastal Engineering by ed. J. Simm and I. Cruickshank  
Publisher: Thomas Telford, U.K., 1998.  
Oceanographical Engineering by R.L. Wiegel Publisher: Prentice-Hall, Inc.,  
Englewood Cliffs, New Jersey, USA, 1964; reprint, 2005.