



Template syllabus of the revised course

Course Name : Coastal Planning and Management

Number of credits : 4 ECTS

Period: Spring semester

Coordinator	Dr. Teh Hee Min
Credits	3 credit hours (4 ECTS)
Lecturers	Dr. Teh Hee Min, Dr Siti Habibah Shafiai
Level	Undergraduate
Host institution	Universiti Teknologi PETRONAS
Course duration	12 weeks
New/revised	Revised

Summary

This course aims at providing a framework of knowledge required for the proper planning and management of coastal zone in respecting the principles of sustainability. The course covers the factors leading to coastal erosion, marine pollution, coastal reclamation, planning concept in coastal zones, coastal protection and stabilization measures, and shoreline management.

Target student audiences

Final year undergraduate students from Bachelor of Civil and Environmental Engineering with Honours.

Prerequisites

Required courses (or equivalents): None

Aims and objectives

The main objective of this course is to introduce the important frameworks in coastal planning and management and to develop further understanding and knowledge related to coastal zone sustainability

The Authentic Tasks are:

General learning outcomes:

By the end of the course, successful students will be able to:

1. Assess the influencing environmental factors and related coastal processes, and analyze causes of coastal erosion/sedimentation.
2. Develop skills and knowledge for the planning and management of coastal zone in respecting the principles of sustainability.
3. Evaluate application of different coastal stabilization schemes and the governing factors for their selection and impacts.



Overview of sessions and teaching methods

The course will make most of interactive and self-reflective methods of teaching and learning.

Learning methods	<ul style="list-style-type: none">• Lecture• Discussion• Project
Course outline	<p>Topic 1 Introduction to Coastal Planning and Management</p> <ul style="list-style-type: none">• Coastal nomenclature• Introduction to coastal hydrodynamic and transport processes• Marine pollution <p>Topic 2 Coastal Classification and Causes of Coastal Erosion</p> <ul style="list-style-type: none">• Classification of coastal features and shoreline response• Impacts of meteomarine and natural processes to coastal morphology• Impacts of development to coastal processes <p>Topic 3 Planning Concept in the Coastal Zone</p> <ul style="list-style-type: none">• Implementation of sustainable development• Integrated coastal zone management• Shoreline management plan• Guidelines for development in coastal areas. <p>Topic 4 Coastal Stabilization Schemes</p> <ul style="list-style-type: none">• Overview of types of coastal stabilization scheme• Applications and impacts• Dredging and land reclamation• Marine pollution control• Management solutions• Basic cost components and environmental concerns in the design and implementation of the protection scheme <p>Topic 5 Hydraulic Study For Shoreline Management</p> <ul style="list-style-type: none">• Guidelines and requirements• Field investigations and surveys• Impact assessment and monitoring• Numerical models as support for shoreline management <p>Topic 6 Group Project & Case Simulation/Role Play</p> <ul style="list-style-type: none">• Simulation session – Case study

Literature

Main Reference:

1. Mangor, K. (2004). "Shoreline management Guidelines", DHI Water & Environment, Horsholm, Denmark.
2. Kamphuis, J. W. (2000). "Introduction to Coastal Engineering and Management", World Scientific.

Optional References:

1. Reeve, D., Chadwick, A. & Fleming, C. (2004). "Coastal Engineering – Processes, Theory and Design Practice. Spon Press.
2. Sorensen, R. W. (2005). "Basic Coastal Engineering", 3rd Edition, Plenum Publishing Corporation
3. Dean, G. R (2002). "Coastal Processes with Engineering Applications". Cambridge University Press.

Course workload

The table below summarizes course workload distribution:

Activities	Learning outcomes	Assessment	Estimated workload (hours)
In-class activities (36 hours)			
Guided Learning and Moderated in-class discussions	1. Assess the influencing environmental factors and related coastal processes, and analyze causes of coastal erosion/sedimentation.	Class participation and preparedness for discussions	9
Guided Learning and Moderated in-class discussions	2. Develop skills and knowledge for the planning and management of coastal zone in respecting the principles of sustainability.	Class participation and preparedness for discussions	9
Guided Learning and Moderated in-class discussions	3. Evaluate application of different coastal stabilization schemes and the governing factors for their selection and impacts.	Class participation and preparedness for discussions	18
Independent work (84 hours)			
Self-Learning (Independent Learning)	1. Assess the influencing environmental factors and related coastal processes, and analyze causes of coastal erosion/sedimentation.	Quizzes and Tests	26.5
Self-Learning (Independent Learning)	2. Develop skills and knowledge for the planning and management of coastal zone in respecting the principles of sustainability.	Quizzes and Tests	17.5
Self-Learning (Independent Learning)	3. Evaluate application of different coastal stabilization schemes and the governing factors for their selection and impacts.	Quizzes and Tests	40
Total			120



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Grading

The students' performance will be based on the following:

Assessment Coursework (Assignments/Project, Quizzes, Tests)- 50%:
Final Examination – 50%

Evaluation A (85 - 100)
A- (80 – 84.9)
B+ (75 – 79.9)
B (65 – 74.9)
C+ (55 - 64.9)
C (50 – 54.9)
D+ (45 – 49.9)
D (40 –44.9)
F (<40)