



Co-funded by the
Erasmus+ Programme
of the European Union

VEB4213

Ocean and Coastal Engineering



UNIVERSITI
TEKNOLOGI
PETRONAS
energising futures

**Marine Coastal and Delta Sustainability for
Southeast Asia (MARE)**



- Contains “Ocean and Coastal Engineering” course materials (for BEng. Civil Engineering)
- Site URL: <https://ulearn.utp.edu.my/course/view.php?id=10606> (Available in English).
- Modules:
 - Announcements
 - Overview
 - Course Syllabus
 - Teaching Methodology
 - Course Materials
 - Lecture Notes
 - Additional Resources
 - Test & Project
 - Statistics

Overview (Disclaimer)



Co-funded by the
Erasmus+ Programme
of the European Union



Announcements

MARE Disclaimer

⚙ Settings ▼

◀ Verification of OCE Coursework Marks

Display replies in nested form ⇅

Move this discussion to ... ⇅

Move



MARE Disclaimer

by [Teh Teh Hee Min - Dr \(ACAD/UTP\)](#) - Friday, 14 January 2022, 7:44 PM

These lecture materials are for the Marine Coastal and Delta Sustainability for Southeast Asia (MARE) (Project No. 610327-EPP-1-2019-1-DE-EPPKA2-CBHE-JP).

This project has been funded with support from the European Commission. This publication reflects the views only of the authors, and the Commission cannot be made responsible for any use which may be made from the information contained herein.



Co-funded by the
Erasmus+ Programme
of the European Union



This lecture notes contain topics of the impacts of oil and gas activities on the marine environment, awareness on the effects of hydrocarbon exploration, and an overview of the rules and regulations in marine pollution management.

Course Syllabus



Co-funded by the
Erasmus+ Programme
of the European Union



VEB4213 OCEAN AND COASTAL ENGINEERING SEPTEMBER 2021

Course Instructor: Ts. Dr. Teh Hee Min (heemin.teh@utp.edu.my)

Course Synopsis:

Coastlines and the coastal areas are not only becoming increasingly important for economic development, but they are also very dynamic zones which are subject to threat caused by environmental and anthropogenic influences. Thus, knowledge in coastal engineering is important in addressing related challenging issues.

Course Learning Outcomes:

CLO	Course Outcome	PO2: Identify, formulate, conduct research literature and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences.
1	Evaluate the properties of offshore and near shore waves and establish design wave specification.	X
2	Assess currents and tidal processes.	X
3	Formulate sediment budget and perform shoreline evolution analysis.	X

Lectures:

Day	Time	Venue
Monday	11 am – 1 pm	MS Teams (Team code: dmlhrx8)
Thursday	4 pm – 6 pm	

Assessment:

Form of Assessment	Weightage	Number of Assessments	Week
• Quiz	10%	3	5, 9, 12
• Assignment	5%	1	6
• Project	5%	1	11
• Test	50%	2	6, 10
• Extended Assignment (EA)	30%	1	13/14

References:

- Reeve, D., Chadwick, A. & Fleming, C. (2018). "Coastal Engineering – Processes, Theory and Design Practice". 3rd Edition, CRC Press. s
- Kamphuis, J. W. (2010). "Introduction to Coastal Engineering and Management", 2nd Edition, World Scientific.
- US Army Corps Of Engineers (1984). "Shore Protection Manual." Army Engineer Waterways Experiment Station, Vicksburg, MS. 2v.
- US Army Corps of Engineers (2006). "Coastal Engineering Manual."

Course Planning:

Week	Topics	CLO	Assessments
1	Topic 1: Introduction to Ocean and Coastal Engineering <ul style="list-style-type: none"> Terminology of the ocean and coasts Ocean environmental forces Introduction to coastal protection measures and their applications 	CLO1	
2	Topic 2: Wave Generation <ul style="list-style-type: none"> Wind and wave Types of waves Wave characteristics Wave theories and their applications Small-amplitude wave theory 		
3	<ul style="list-style-type: none"> Water particle velocities, accelerations, pressure variation induced by wave motion, influence of water depth on wave characteristics, group velocity & energy propagation Physical modelling demonstration 		
4	Topic 3: Wave Transformation <ul style="list-style-type: none"> Wave shoaling Wave breaking Wave refraction 		
5	<ul style="list-style-type: none"> Wave diffraction Wave reflection Wave run-up 		Quiz 1 (CLO1)
6	Topic 4: Statistical Properties and Spectra of Sea Waves <ul style="list-style-type: none"> Random wave profiles and representative waves 		Assignment (CLO1) Test 1 (CLO1)
7	<ul style="list-style-type: none"> Spectra of sea waves Statistical analysis of extreme waves 	CLO2	
8	Topic 5: Tides and Currents <ul style="list-style-type: none"> Origin of the tides Characteristics of the tides Harmonic analysis & prediction of the tides 		
9	<ul style="list-style-type: none"> Tides in estuaries Types of currents 		Quiz 2 (CLO2)
10	Topic 6: Coastal Sediment Transports <ul style="list-style-type: none"> Onshore-offshore sediment transport Longshore sediment transport Estuarine processes 	CLO3	Test 2 (CLO2)
11	Topic 7: Coastal Morphology <ul style="list-style-type: none"> Sediment budget for a coastal system Estuarine morpho dynamics Long-term prediction of shoreline changes 		Project (CLO1,2,3)
12	<ul style="list-style-type: none"> Introduction to numerical simulation using commercial software (1-day seminar) 		Quiz 3 (CLO3)
13-14	STUDY WEEK & FINAL ASSESSMENT		EA



VEB4213:Ocean and Coastal Engineering - September 2021







Home

My courses

VEB4213:Ocean and Coastal Engineering - September 2021

Turn editing off

+  Announcements 

+  COASTAL AND MANGROVES CONSERVATION (CMC 2021) TIKTOK CHALLENGE 

+  Invitation to Impacts of Climate Change on Coastal Sustainability Forum 

Edit ▾

Edit ▾ 

Edit ▾ ☒


Edit ▾ ☒


+ Add an activity or resource





Course Details

Edit ▾

+  Course Outline 

+  Shore Protection Manual (Reference Book) 

+  OCE Timetable_Sep 2021 

Edit ▾ ☒

Edit ▾ ☒

Edit ▾ ☒

+ Add an activity or resource

Course Materials



Co-funded by the
Erasmus+ Programme
of the European Union



Week 1

Edit

Topic 1: Introduction to Coastal Environment

Edit

Topic 2 - Part 1: Wave Formation and Wave Mechanics

Edit

Shore Protection Manual - Table C-1

Edit

Lecture 1: Video Recording on 6 Sep 2021

Edit

Lecture 2: Video Recording on 9 Sep 2021

Edit

6 Sep 2021 - Lecture 1 (Week 1): Learning Satisfaction Poll

Edit

9 Sep 2021 - Lecture 2 (Week 1): Learning Satisfaction Poll

Edit

Add an activity or resource

Week 2

Lecture 3: Video Recording on 13 Sep 2021

13 Sep 2021 - Lecture 3 (Week 2): Learning Satisfaction Poll

15 Sep 2021 - Lecture 4 (Week 2): Online Forum - Impacts of Climate Change on Coastal Sustainability Forum

Week 10

Edit

Lecture 16: Video Recording on 8 Nov 2021

Edit

Lecture 17: Video Recording on 11 Nov 2021

Edit

Add an activity or resource

Week 11

Edit

Lecture 18 (Adjunct Lecture): Video Recording on 15 Nov 2021

Edit

Lecture 19: Project Presentation on 18 Nov 2021

Edit

Add an activity or resource

Week 12

Edit

Lecture 20: Video Recording on 22 Nov 2021

Edit

Coastal Estuaries

Edit

Estuary Ecology

Edit

Geologic Types of Estuaries

Edit

How Estuaries are formed?

Edit



These lecture materials are for the Marine Coastal and Delta Sustainability for Southeast Asia (MARE) (Project No. 610327-EPPP-1-2019-1-DE-EPPP02-CBHE-JP)

This project has been funded with support from the European Commission. This publication reflects the views only of the authors, and the Commission cannot be made responsible for any use which may be made from the information contained herein.



TOPIC 4

SEDIMENT TRANSPORT & COASTAL MORPHODYNAMICS



UNIVERSITI
TEKNOLOGI
PETRONAS
energising futures

Additional Resource



Co-funded by the
Erasmus+ Programme
of the European Union



ORGANISED BY: UTP, ISB, Co-funded by the Erasmus+ Programme of the European Union, Wetlands International, USR, MH, CSD, YUTP

IN COLLABORATION WITH:

SUPPORTED BY:

SPONSORED BY:

LIVE FORUM

IMPACTS OF CLIMATE CHANGE ON COASTAL SUSTAINABILITY

SEPTEMBER 15, 2021 **2:00 P.M.** **MICROSOFT TEAMS**

YBhg. Dato' Mohamed Zin Bin Yusop
Director of Perak Forestry Department

Dato' Paduka Ir. (Dr.) Hj. Keizrul Bin Abdullah
Director of Wetlands International Malaysia

Tuan Ir. Baharuddin Bin Abdullah
Director of Department of Irrigation & Drainage (JPS) Perak

Ir. Dr. Lee Hin Lee
Director of Coastal Management & Oceanography Research Centre (NAHRIM)

Dr. Ahmad Aldrie Amir
Senior Lecturer/ Research Fellow at Institute for Environment & Development (LESTARI) of Universiti Kebangsaan Malaysia (UKM)

SCAN HERE TO REGISTER

E-CERTIFICATE IS PROVIDED

FOR MORE INQUIRIES, KINDLY CONTACT:

AMANDA YAP: 012-865 2881
 GLADYS LIAU: 017-378 1223

@_CMC2021_ CMC2021



ADJUNCT LECTURE

Coastal Challenges In Malaysia: The Past, The Present and The Future

Ir. Arman Mokhtar

Senior Principal Assistant Director, Coastal Zone Management Division, Department of Irrigation and Drainage, Putrajaya



Ir Arman Mokhtar was a civil engineering graduate of Universiti Kebangsaan Malaysia. He furthered his MSc in Water Science & Engineering specialized in Coastal Engineering & Port Deployment at UNESCO-IHE Institute for Water Education Delft, The Netherlands. He joined Coastal Engineering Division of Department of Irrigation and Drainage (DID) as a young engineer in 2002. He got promoted to as senior assistance director of Coastal Section in 2009 and Principal Assistant Director of River Basin & Coastal Zone Management Division in 2013. At present, Ir Arman is Senior Principal Assistant Director of Coastal Zone Management Division of DID. He received Excellent Service Award from DID in 2006, 2012 and 2017. He is a Professional Engineer with Practicing Certificate registered with Board of Engineers Malaysia and an ASEAN Chartered Professional Engineer. He has more than 20 years of working experience in coastal and hydraulic engineering, port development, dredging and reclamation.

All are INVITED

- **Date** : 8th November 2021 (Monday)
- **Time** : 11:00 AM – 01:00 PM
- **Microsoft Teams Link**: <https://bit.ly/3FFXMik>

Organised by:
Department of Civil and Environmental Engineering & Centre for Academic Excellence (CAdeX)



Test & Project




Co-funded by the
Erasmus+ Programme
of the European Union




Test

Project






UTP

UNIVERSITI TEKNOLOGI PETRONAS



ULearn


Universiti Teknologi PETRONAS Virtual Learning Environment

VEB4213: Ocean and Coastal Engineering - September 2021

[Home](#)
[My courses](#)
[VEB4213: Ocean and Coastal Engineering - September 2021](#)
[Tests](#)
[Test 1 - Ocean and Coastal Engineering](#)



















Test 1 - Ocean and Coastal Engineering



INSTRUCTIONS TO CANDIDATES (NON-MCQ)

1. This **ONLINE TEST** contains **THREE (3) Questions ONLY**.
2. Answer **ALL** questions in **ONE (1) HOUR and THIRTY (30) MINUTES**.
3. Only **SINGLE** attempt for this test is **ALLOWED**.
4. **EACH** question needs to be **ANSWERED** before proceeding to the **NEXT** one. Going back to the previous question is **NOT ALLOWED**.
5. Where applicable, show clearly steps taken in arriving at the solutions and indicate **ALL** assumptions, if any.

Declaration Statements

Project 			Edit 	
	 Course Project 		Edit 	 
	 ISMP Management Units 		Edit 	
	 Wave data 		Edit 	
	 Bathymetry - Navionics 		Edit 	
	 Bathymetry - Fishing App 		Edit 	
	 Tide data 		Edit 	
	 MU Briefing by Ir Vasukey on 1 Nov 2021 		Edit 	
	 Grouping 		Edit 	

Questionnaires

Questionnaire for Students (MARE - Marine Pollution Control and Management)

[Overview](#)
[Edit questions](#)
[Templates](#)
[Analysis](#)
[Show responses](#)

Anonymous entries (387)

1
2
3
4
5
6
7
8
9
10
...
20
»

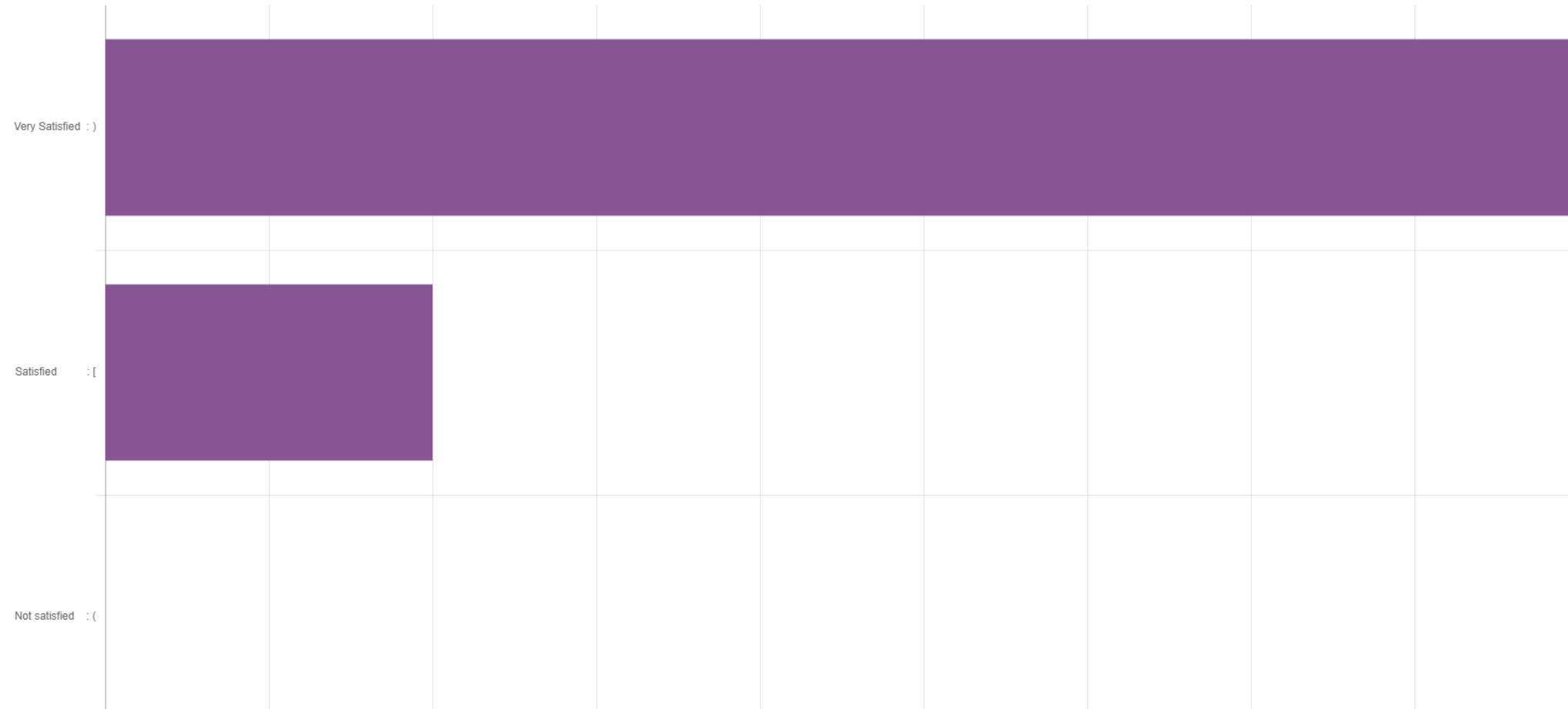
Download table data as
Comma separated values (.csv)
Download

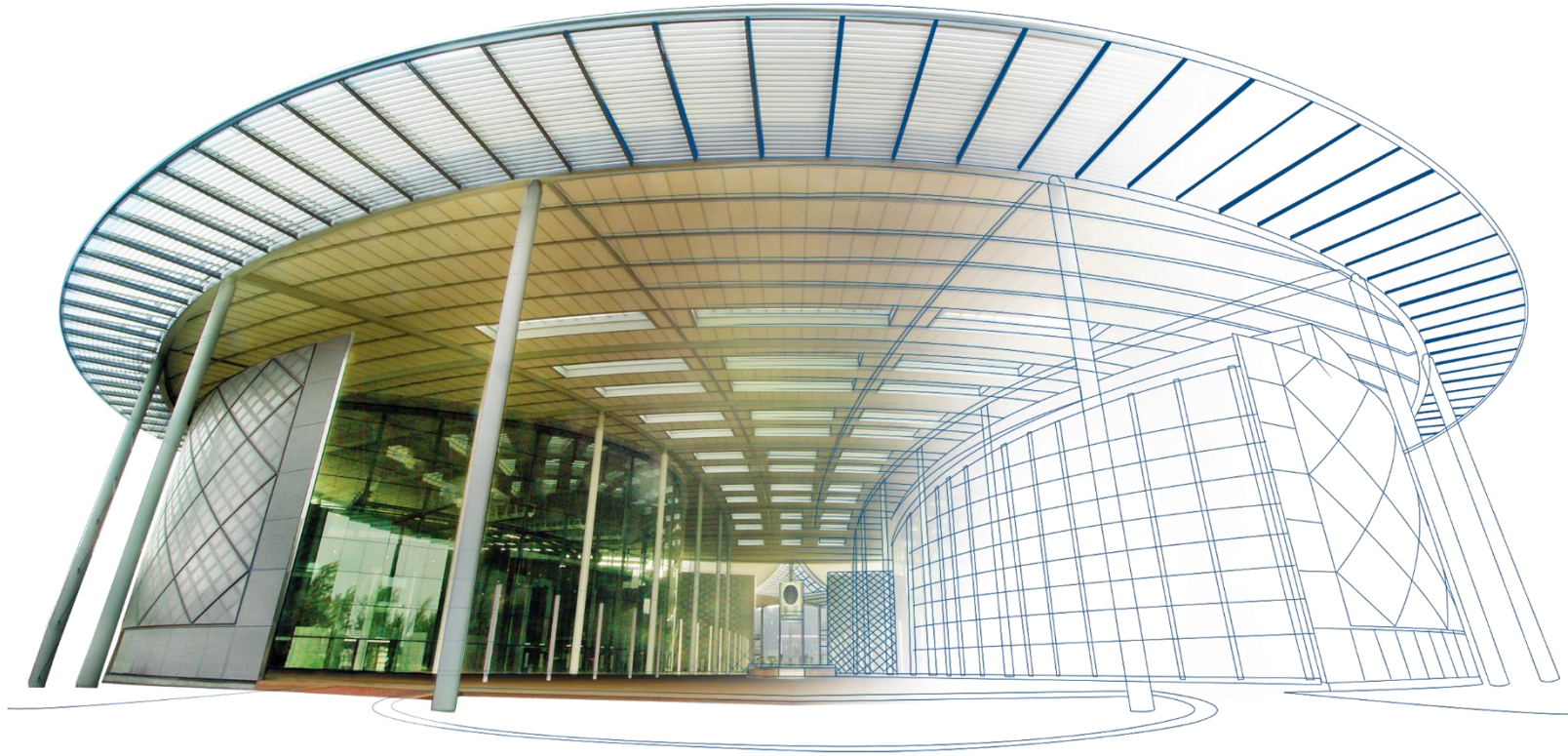
Response number	1. Your overall assessment ...	2. In your opinion, has the...	3. What aspects of the ...	4. How do you evaluate the ...	5. Was your personal level ...	6. Does the IOGISD course ...	7. How do you generally ...	8. How do you assess the ...	9. How useful do you think ...
Response number: 1	The course differed slightly from all other profile courses	Studying sections (modules) of the course devoted to self-study	Using a MOOC learning model	The TLM is partly consistent with the Curriculum of the courses	No, new knowledge was required	Yes, it requires, in part : Monitoring the progress of students so that doubts on the subjects can be cleared.	Multimedia modules in the IOGISD course are very useful for self-study	The proposed navigation does not affect the acceleration of the learning process of the material	Remote video lectures are very useful for self-study
Response number: 2	Good, interesting	Studying sections (modules) of the course devoted to self-study	Using a MOOC learning model	The TLM is partly consistent with the Curriculum of the courses	Yes, it was	Yes, it requires, in part : Students interaction with other students.	Multimedia modules in the IOGISD course are very useful for self-study	Navigation is intuitive, helps accelerate the learning process	Remote video lectures are very useful for self-study
Response number: 3	Good, interesting	Studying sections (modules) of the course devoted to self-study	Availability of feedback from students during the course	TLM is highly relevant to the Curriculum of the courses, contributes to the effective support of the learning process	No, new knowledge was required	Yes, it requires, in part : Monitoring the progress of students so that doubts on the subjects can be	Multimedia modules in the IOGISD course are very useful for self-study	Navigation is intuitive, helps accelerate the learning process	Remote video lectures are very useful for self-study

Questionnaires Results

How satisfied are you with the teaching and learning that took place today?

Responses





THANK YOU

Get Connected with



Scan the QR code or go to <https://bit.ly/2Ra323b>



www.utp.edu.my



UTPOfficial