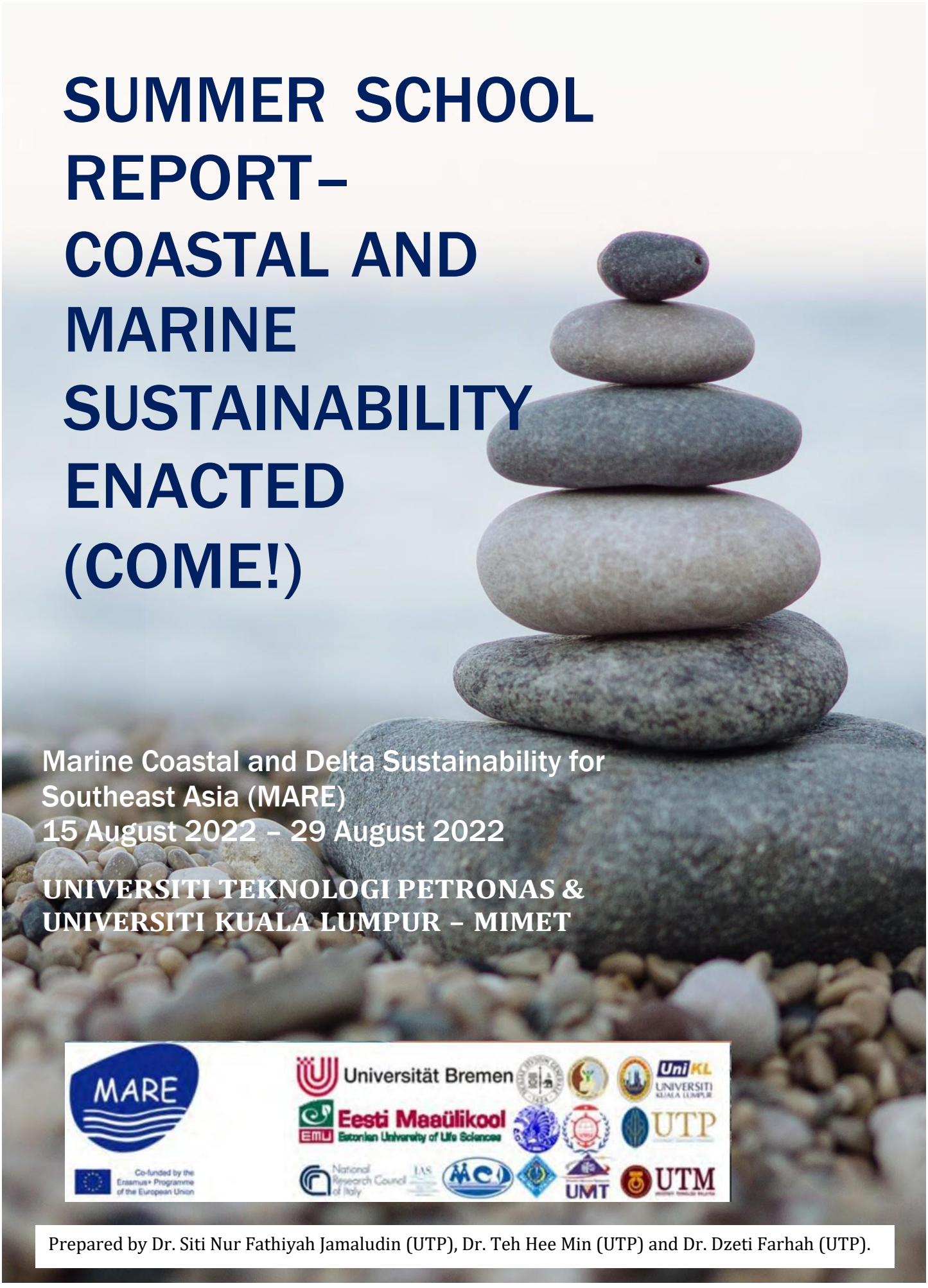
SUMMER SCHOOL REPORT– COASTAL AND MARINE SUSTAINABILITY ENACTED (COME!)



Marine Coastal and Delta Sustainability for Southeast Asia (MARE)
15 August 2022 – 29 August 2022

UNIVERSITI TEKNOLOGI PETRONAS & UNIVERSITI KUALA LUMPUR – MIMET

Prepared by Dr. Siti Nur Fathiyah Jamaludin (UTP), Dr. Teh Hee Min (UTP) and Dr. Dzeti Farhah (UTP).

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

INTRODUCTION

COME!
Coastal and Marine Sustainability Enacted!

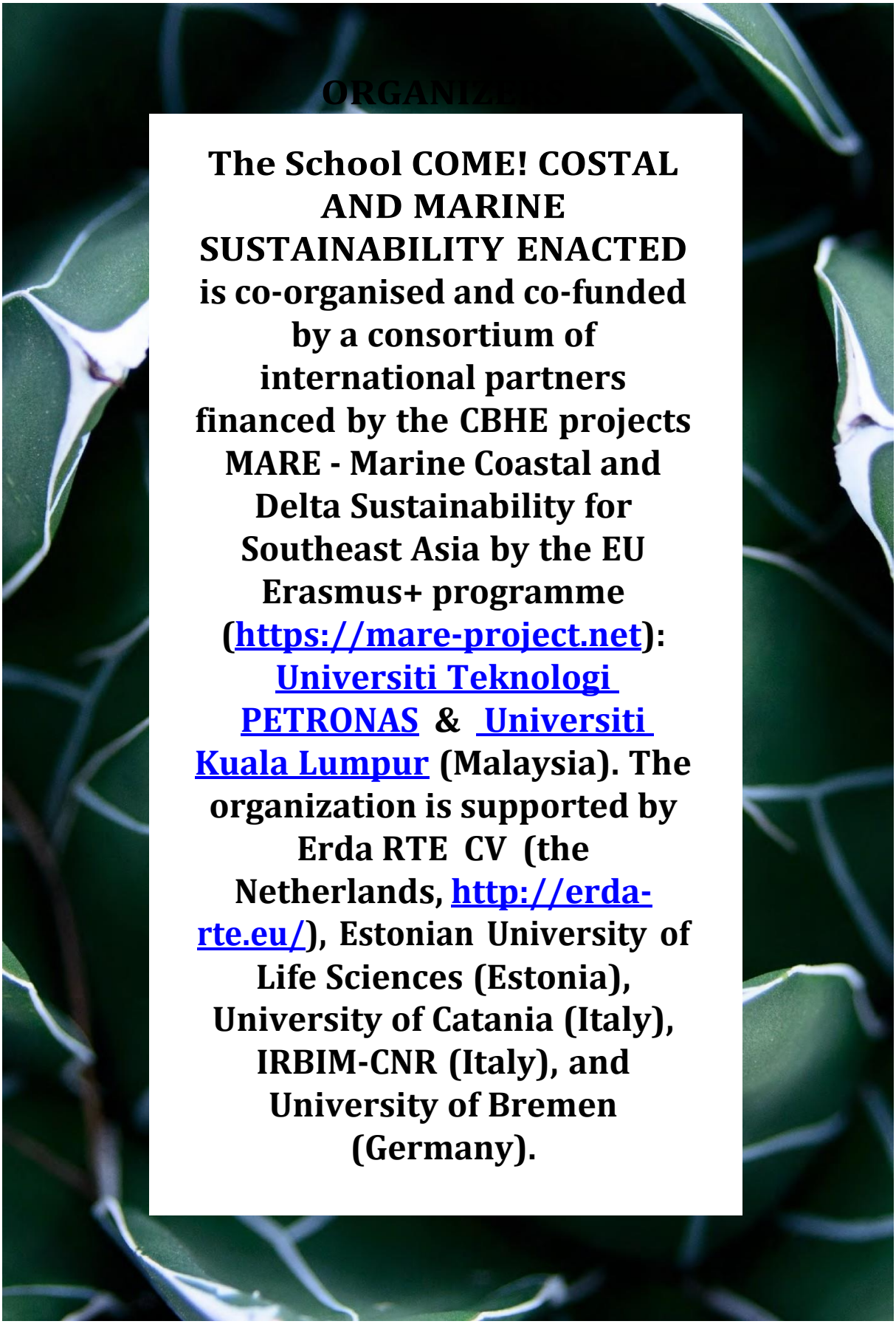
The **COME!** summer school was a vibrant mixture of interactive sessions, field trips, and group work in a unique setting, designed to give participants hands-on project and research experience with a range of issues related to marine, coastal and delta sustainability with a focus on novel and innovative approaches and methodologies. After an introductory day with an overall overview of sustainability challenges and the state of art in marine & coastal science, policy and management, during the week 1 the students followed the plenary sessions or one of parallel sessions normally exploring marine or coastal/delta issues. The second week focused on the interactions with stakeholders – business, public bodies and NGOs engaged in management & governance activities over marine and coastal resources. To support in-class learning, the educational process also included few field excursions. During the first weekend, the participants joined the fieldtrip to Penang Island in north Peninsular Malaysia to visit the coastal reclamation project while on the second weekend the participants joined cultural visit to Ipoh.

The Summer School is organised under Erasmus+ CBHE projects MARE" Marine Coastal and Delta Sustainability for Southeast Asia" (https://mare-project.net)

HIGHLIGHT

The school started and finished in Seri Iskandar, hosted by the Universiti Teknologi PETRONAS (UTP); most of the stakeholder sessions (as well as supporting sessions by academic faculty) including trips to Penang and Ipoh were organized by UTP. During the second week, the summer school was hosted at premises of Universiti Kuala Lumpur (UniKL) in Lumut.

The **COME!** summer school was a valuable learning experience for everyone, but having a great time is also a summer essential. All the participants were students and young experts with some academic staffs.



ORGANIZE

The School COME! COSTAL AND MARINE SUSTAINABILITY ENACTED is co-organised and co-funded by a consortium of international partners financed by the CBHE projects MARE - Marine Coastal and Delta Sustainability for Southeast Asia by the EU Erasmus+ programme (https://mare-project.net): Universiti Teknologi PETRONAS & Universiti Kuala Lumpur (Malaysia). The organization is supported by Erda RTE CV (the Netherlands, http://erda-rte.eu/), Estonian University of Life Sciences (Estonia), University of Catania (Italy), IRBIM-CNR (Italy), and University of Bremen (Germany).

PROGRAM SCHEDULE

Day 1 – Monday, 15th August 2022

Summer School Opening Day

			UTP Campus			
№	*Time*	*Venue:*	*Event* ***Dress Code: Smart Casual***			
1.	10.00 – 10.30	Seminar Room 5, Undercroft, UTP	Arrival of all participants. Registration of all participants (Students and Staff).			
2.	10.30 – 11.15	Seminar Room 5, Undercroft, UTP	**Introduction of Summer School participants (Program and organizational arrangements)** HSE Briefing UTP Montage Briefing of Programme (Ir. Hafizah) Briefing on Field Trip Penang (Dr. Teh) Briefing on Optional Tours (Pn. Khairunnisa)			
3.	11.15 – 11.45 11.45 – 12.15	Seminar Room 5, Undercroft, UTP	1. UTP Campus Tour (walking): IRC and Chancellor Hall 2. UTP Laboratory Visit: Civil Engineering Department (Block J) (Wave tank facility)			
4.	12.15 – 2.00	Seminar Room 7, Undercroft, UTP	Lunch Welcoming speech – AP Ts Dr Amila (RMC Director, Universiti Teknologi PETRONAS, Malaysia)			
5.	14.00 -15.00	Seminar Room 5, Undercroft, UTP	**Lecture 1: Prof. Kalev Sepp,** Estonian University of Life Sciences Introduction: global and regional sustainability – from policy concepts to the management action (100 pax).			
6.	15.00 -17.00	Block 12, UTP	Lab Visit (Petroleum Engineering Department, Block 12) Core Lab and Drilling Lab			

Day 2 – Tuesday, 16th August 2022

Plenary and parallel sessions

№	*Time*	*Format, Lecture room*	*Event* ***Dress Code: Smart Casual***	
1.	9.00 -11.00	Plenary session Seminar Room 5, Undercroft, UTP	**Lecture: Prof. Kalev Sepp,** Estonian University of Life Sciences Ecosystem Service concept. Methods for mapping and assessment of ecosystem services. ES concept in Environmental Policy (implications for coastal spatial planning and management) (100 pax)	
2.	11.00-13.00	Parallel sessions Seminar Room 3 & 4, Undercroft, UTP	**Lecture 1 (11-12pm): Dr Muhammad Hafeez Jeofry,** Universiti Malaysia Terengganu Title: Ice Sheet & Marine Sustainability: Sea level rise from ice-sheet melting using CMIP6 model **Lecture 2 (12-13pm): Lecture & Practical: Dr Siti Nur Fathiyah,** Universiti Teknologi PETRONAS Title: Delta Environment and Hydrocarbon Potential: Present-day Analogue	**Lecture: Siiri Külm,** Estonian University of Life Sciences Data integration and participatory process in developing integrated coastal zone management (ICZM). Example of the Eastern Baltic Sea
3.	13.00 – 15.00	Lunch		
4.	15.00 – 17.00	Parallel sessions Seminar Room 3 & 4, Undercroft, UTP	**Lecture: Dr Corrienna,** Universiti Teknologi Malaysia Title: Environmental Awareness in Conserving Natural Resource	**Practical exercise: Siiri Külm, Lagle Lõhmus,** Mapping Ecosystem Services of Coastal areas. Ecosystem services matrix – expert evaluation. Ecosystem Services hot and cold spots

Day 3 – Wednesday, 17th August 2022

Educational Trip to UniKL – MIMET, Lumut

Participants to gather in front of Chancellor Complex, UTP at 8.00 a.m.

№	*Time*	*Format, Lecture room*	*Event* ***Dress Code: Smart Casual***
1.	09.00 – 10.30	UTP	Journey from UTP to UniKL MIMET
2.	10.45 – 11.00	Dewan Kuliah 1	Safety Briefing
3.	11.00 – 11.30		Introduction about UniKL MIMET by Deputy Dean A&T
4.	11.30 – 12.00		Research and Development Unit
5.	12.00 – 12.30		PostGraduate Unit
6.	12.30 – 14.30	Lunch	Dewan Khatulistiwa
7.	15.00 – 15.30	Shipyard visit	Briefing by URSB
8.	15.30 – 14.30	Workshop visit	Briefing by HoS of respected academic section
9.	16.30 – 17.00		Gathering at UniKL's beach / Photo Session

Day 4 – Thursday, 18th August 2022

Plenary and parallel sessions

№	*Time*	*Lecture room*	*Event* ***Dress Code: Smart Casual***	
1.	9.00 -11.00	Plenary session Seminar Room 5, Undercroft, UTP	**Lecture: Dr. Holger Auel**, University of Bremen: Marine Productivity, Food Webs, and Strategies for a Sustainable Use of Marine Living Resources (Online)	
2.	11.00-13.00	Parallel Session Seminar Room 3 & 6, Undercroft, UTP	**Lecture & Sharing Session:** **Mr. Sandeep Chandola** **Mr. Rahimi Faizal Ibrahim** PETRONAS Exploration Marine and Coastal Sustainability Practices in PETRONAS Career Exposure with PETRONAS	**Practical exercise: Dr. Anne Kull,** Estonian University of Life Sciences Defining Ecosystem services of Coastal areas (carbon storage and sequestration, etc,) using QGIS *(beginning)*
3.	13.00 – 15.00	Lunch		
4.	15.00 – 17.00	Parallel sessions Seminar Room 3 & 6, Undercroft, UTP	**Practical exercise: Dr. Daniele La Rosa,** University of Catania Positive effects of trees on climate regulation, carbon sequestration and noise reduction	**Practical exercise: Dr. Anne Kull,** Estonian University of Life Sciences Defining Ecosystem services of Coastal areas (carbon storage and sequestration, etc,) using QGIS *(continued)*

Day 5 – Friday, 19th August 2022

Plenary and parallel sessions

№	*Time*	*Lecture room*	*Event* ***Dress Code: Smart Casual***	
1.	9.00 - 11.00	Plenary session Seminar Room 5, Undercroft, UTP	**Lecture: Dr. Vincenzo Maccarrone,** Institute for Marine Biological Resources and Biotechnology of the Italian National Research Lecture: Council – (IRBIM-CNR) Anthropocene speaks: impact on the coastal areas	
2.	11.00 - 13.00	Parallel sessions Seminar Room 3 & 4, Undercroft, UTP	**Lecture: Dr Teh Hee Min,** Universiti Teknologi PETRONAS Title: Coastal protection structures and restoration	**11.00-11.30am** **Lecture: Dr. Le Anh Tuan, Vietnam** Impacts and responses of climate change to the coastal areas of the Mekong River Delta in Vietnam **11.30-12.30pm Prof. Dr. Mohd Fadzil Akhir**, Universiti Malaysia Terengganu Title: Impact of sea level to coastal dynamic for marine sustainable (case study)
3.	13.00 – 15.00	Lunch (and Friday prayer for Muslims)		
4.	15.00 – 17.00	Plenary session Seminar Room 5, Undercroft, UTP	**Lecture: Dr. Pietro Scandura,** University of Catania Hydromorphodynamics of the coastal area	

Day 6 – Saturday, 20th August 2022
Educational Fieldwork & Site visits to Seri Tanjung Pinang 2, Tg. Tokong, Penang.
Aims: Familiarize with the construction technologies used for coastal reclamation and determine the environmental impacts caused by the reclamation operations and the control measures (a dedicated leaflet for the trip)
7.00 am – Depart from UTP (Chancellor Complex).

Day 7 – Sunday, 21st August 2022
Presentation of tasks given during the fieldwork (in-class activities in UTP)

Day 8 – Monday, 22nd August 2022 at UniKL

№	*Time*	*Format, Lecture room*	*Event* ***Dress Code: Smart Casual***
1.	09.00 – 10.30		Departure to UniKL
2.	10.30 – 13.00	Dewan Kuliah 1 **S**ustainability **E**ffort in **M**arine and **Ma**ritime **T**echnology **S**ymposium **(SEMMarTS)**	Welcoming Speech 1. Assoc. Prof. Ts. Cmdr (Rtd) Dr. Aminuddin Md Arof Keynote Speaker 1. Prof Dr Md Redzuan Zoolfakar 2. YBhg Dato' Capt Ahmad Sufian bin Abdul Rashid 3. To be appointed (offer to ITL)
3.	13.00 – 15.00	Lunch	
4.	15.00 – 15.30	Dewan Kuliah 1 **S**ustainability **E**ffort in **M**arine and **Ma**ritime **T**echnology **S**ymposium **(SEMMarTS)**	Presenter 1 UniKL MIMET
5.	15.30 – 16.00		Presenter 2 UniKL MIMET
6.	16.00 – 16.30		Presenter 1 ITL
7.	16.30 – 17.00		Presenter 2 ITL
8.	17.00	End	Travelling to hotel/accommodation

Day 9 -Tuesday, 23rd August 2022 at UniKL

№	*Time*	*Format, Lecture room*	*Event* ***Dress Code: Smart Casual***
1.	09.00 – 10.30		Departure to UniKL
2.	10.30 – 13.00	Lecture Vale	VALE Mineral Malaysia S/B 1. Socio-economy vs Sustainability Plan 2. Remain sustainable yet dear to community's heart
3.	13.00 – 14.30	Lunch	
4.	14.30 – 16.30	Visit	VALE Mineral Malaysia S/B Site Visit
5.	17.00		Travelling to hotel/accommodation

Day 10 – Wednesday, 24th August 2022 at UniKL

№	*Time*	*Format, Lecture room*	*Event* ***Dress Code: Smart Casual***
1.	09.00 – 10.30		Departure to UniKL
2.	10.30 – 13.00	Lecture Dewan Kuliah 1 UniKL MIMET	Lumut Port 1. Facing the future 2. Green Port
3.	13.00 – 15.00	Lunch	
4.	15.15 – 16.45	Visit	Lumut Port Site Visit
5.	17.00		Travelling to hotel/accommodation

Day 11 – Thursday, 25th August 2022 at UniKL

№	*Time*	*Format, Lecture room*	*Event* ***Dress Code: Smart Casual***
1.	09.00 – 10.30		Departure to UniKL
2.	10.00 – 13.00	*Lecture*	MTU Power System Green Marine Engine
3.	13.00 – 14.00		Lunch
4.	14.00 – 17.00	*Lecture*	Lecture: UniKL MICET Sustaining coastal enviroment ecosystem
5.	17.00		Travelling to hotel/accommodation

Day 12 – Friday, 26th August 2022 at UniKL

№	*Time*	*Lecture room*	*Event* ***Dress Code: Smart Casual***
1.	09.00 – 10.30		Departure to UniKL
2.	10.00 -13.00	Lecture Dewan Kuliah 1 UniKL MIMET	Educational talk by local authorities / NGO (TBC)
3.	13.00 – 15.00	Lunch	
4.	15.00 - 17.00	Closing ceremony Dewan Kuliah 1 UniKL MIMET	Important Invitee UniKL 1. Director UIO 2. Dean 3. Deputy Dean IIIP UTP 1. TBC MARE Committee 1. TBC
5.	17.00		Travelling to hotel/accommodation

Day 13 – Saturday, 27th August 2022

Educational Visit to Tin Mine Cavern (Gua Tempurung) (OPTIONAL)

Aim: Exposing students to the marine environment (shallow water) that was formed thousands of years ago and has been now exposed inshore.

Note: Entrance ticket and bus fare from UTP to Gua Tempurung (return) need to be covered by the participants. Organizer will advise on the cost for this half-day trip soonest, meanwhile, you may check the website for overview of the cave http://www.ipoh-city.com/attraction/Gua_Tempurung/

PIC: Pn Khairunnisa / CSD / Student volunteers

Day 14 – Sunday, 28th August 2022

Educational Visit to TT5: Tin Dredge Mining (OPTIONAL)

Aim: Exposing students on management of tin mines within Malaysia: impact to delta sustainability

Note: Entrance ticket and bus fare from UTP to TT5 (return) need to be covered by the participants. Organizer will advise on the cost for this half-day trip soonest, meanwhile, you may check the website for overview of the tin dredge area here https://tt5perak.com/

PIC: Pn Khairunnisa / CSD / Student volunteers

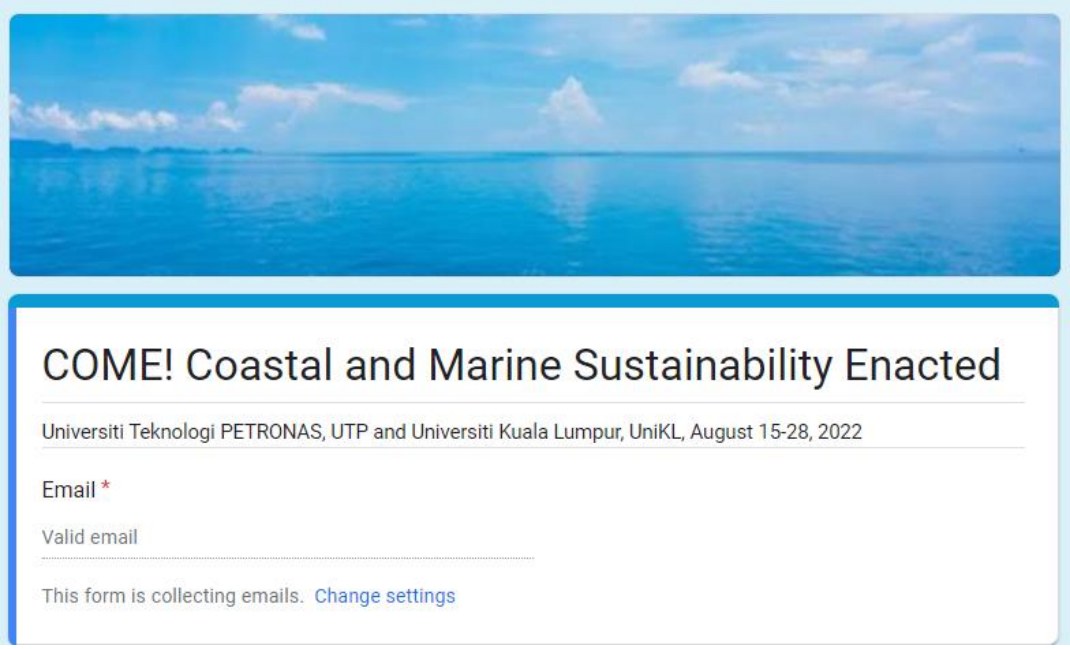
Day 15 – Monday, 29th August 2022)

Day of Departure

PIC: Pn Khairunnisa / CSD / Student volunteers

PARTICIPANTS REGISTRATION AND SELECTION

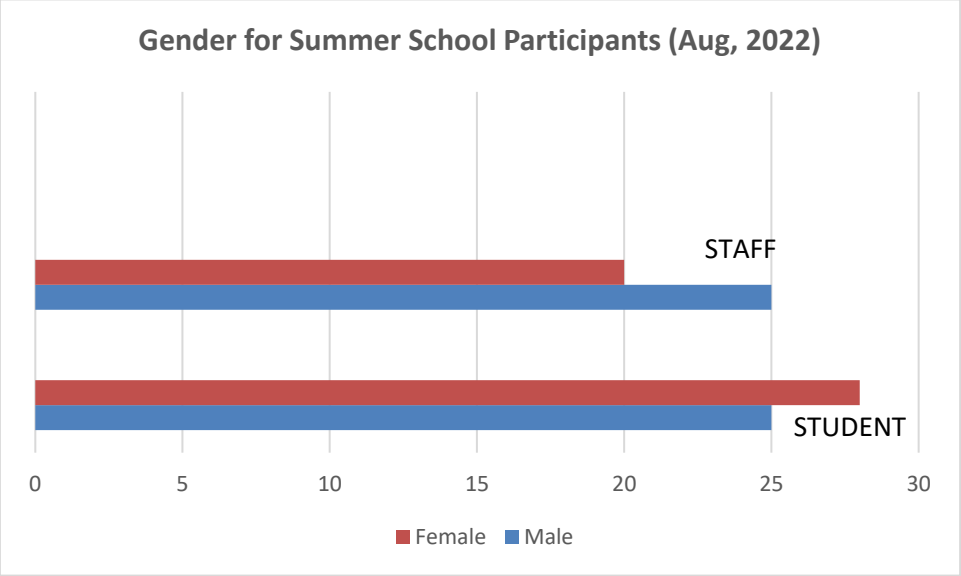
The selection of participants to register with the summer school were done about 1.5 to 2 months prior to the date of summer school. A google form was sent out to all partner universities inviting their students and academic staffs to register (Registration Link for Summer School). We received 43 responses through this form, consisting of both students and academic staff. The responses can be viewed through this link.



The registration form for COME! Summer School

Apart from participants that registered through this google form, there were also students who registered directly through emailing the organizers. Overall, the summer school had hosted 53 students for the whole 14 days duration and 45 lecturers from partner universities. As we are aware, not all lecturers participated in the whole duration of the summer school.

Overall, we have 25 male participants and 28 female participants among the students. While, for the academic staff, 20 participants are female and 25 are male.

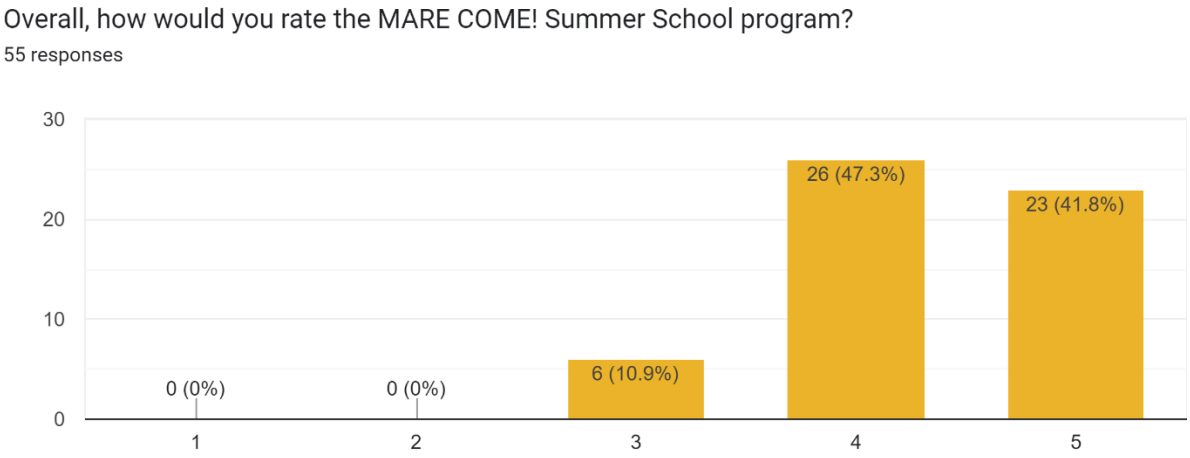


Participants from staffs and students, according to their gender

Some of the participants during Day 2 group photo

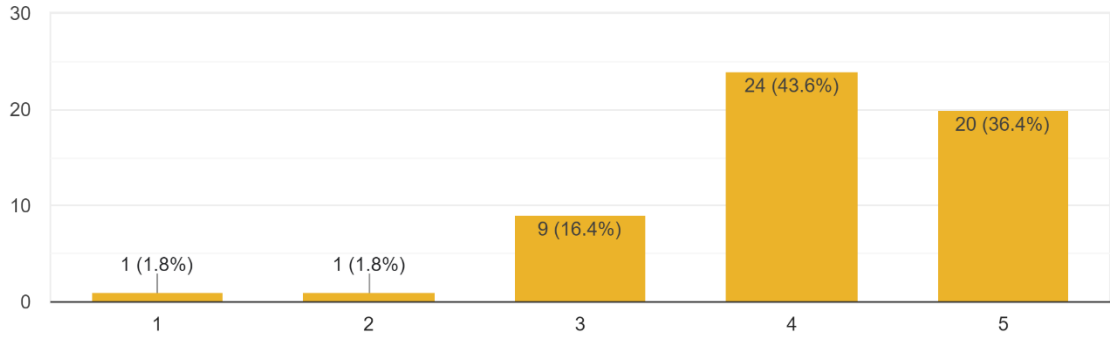
FEEDBACKS

At the end of the program, a survey had been circulated to all participants and the responses from the participants can be accessed through this link. Below are the feedbacks collected from the student participants. Kindly ignore the extra 2 responses which included the organizers who tested the link at the beginning of the feedback form construction.



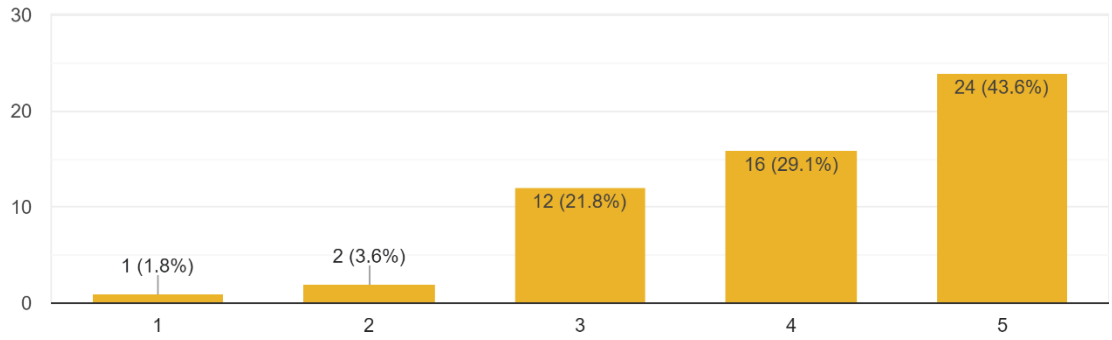
How would you rate the lecture sessions experience overall?

55 responses



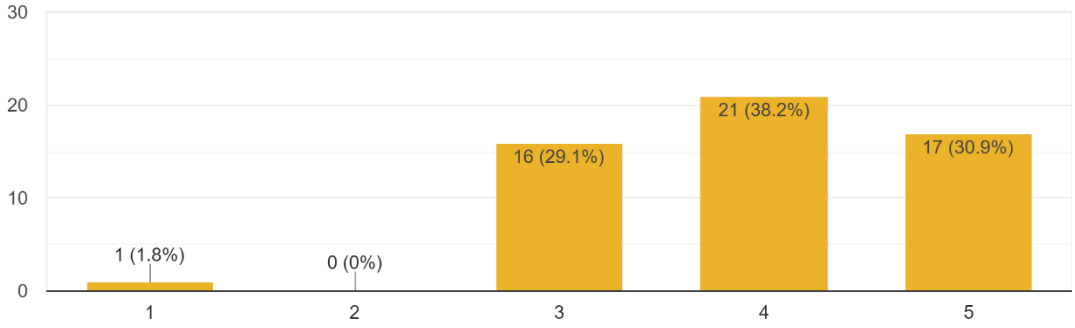
Did you feel that the lecture sessions were useful and applicable to your study program?

55 responses



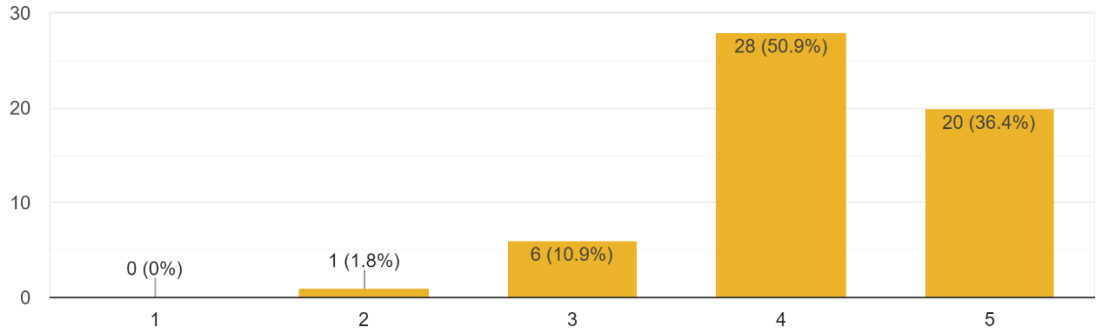
How would you rate the structure and length of the lecture sessions?

55 responses



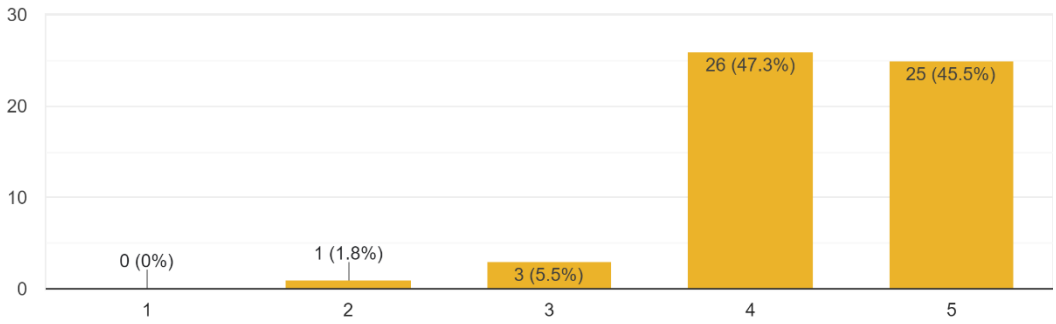
To what extent did you feel the instructor was effective at delivering the lecture?

55 responses



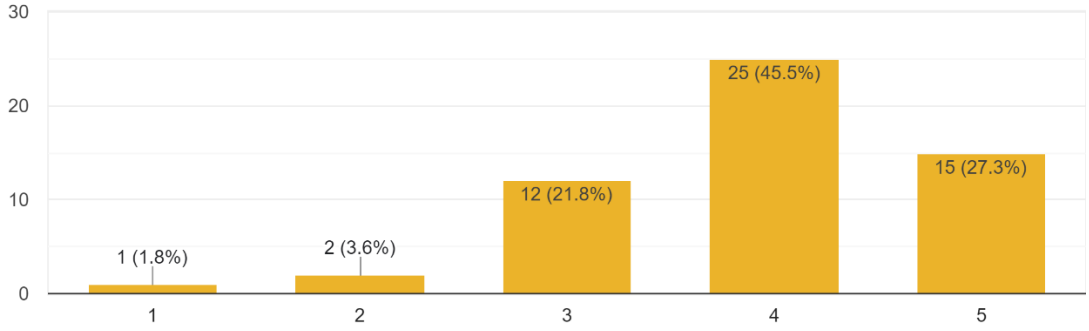
How would you rate the venue of seminar rooms for the lecture sessions?

55 responses



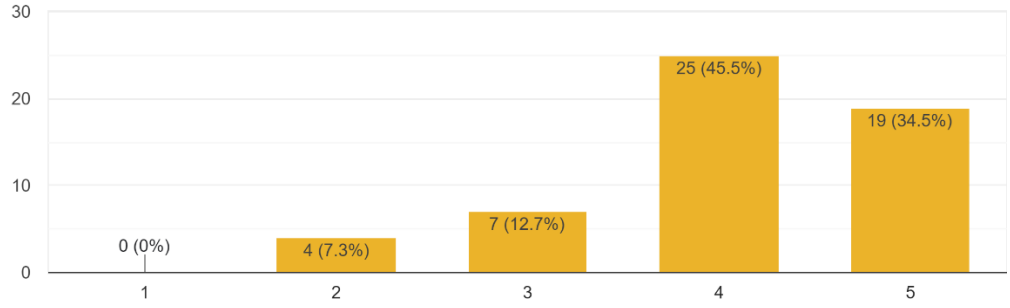
How would you rate the accommodation (in campus and hotel)?

55 responses



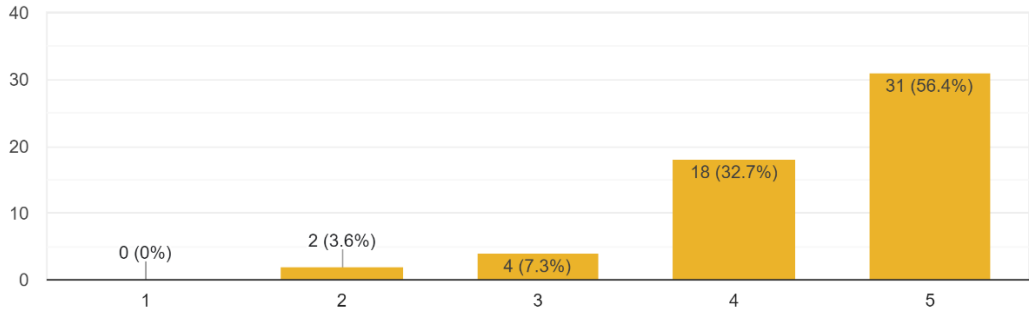
How would you rate the choice of foods available (in campus and hotel)?

55 responses



Would you recommend your friends to join Summer School program in the future?

55 responses



ACTIVITIES CONDCUTED IN UTP

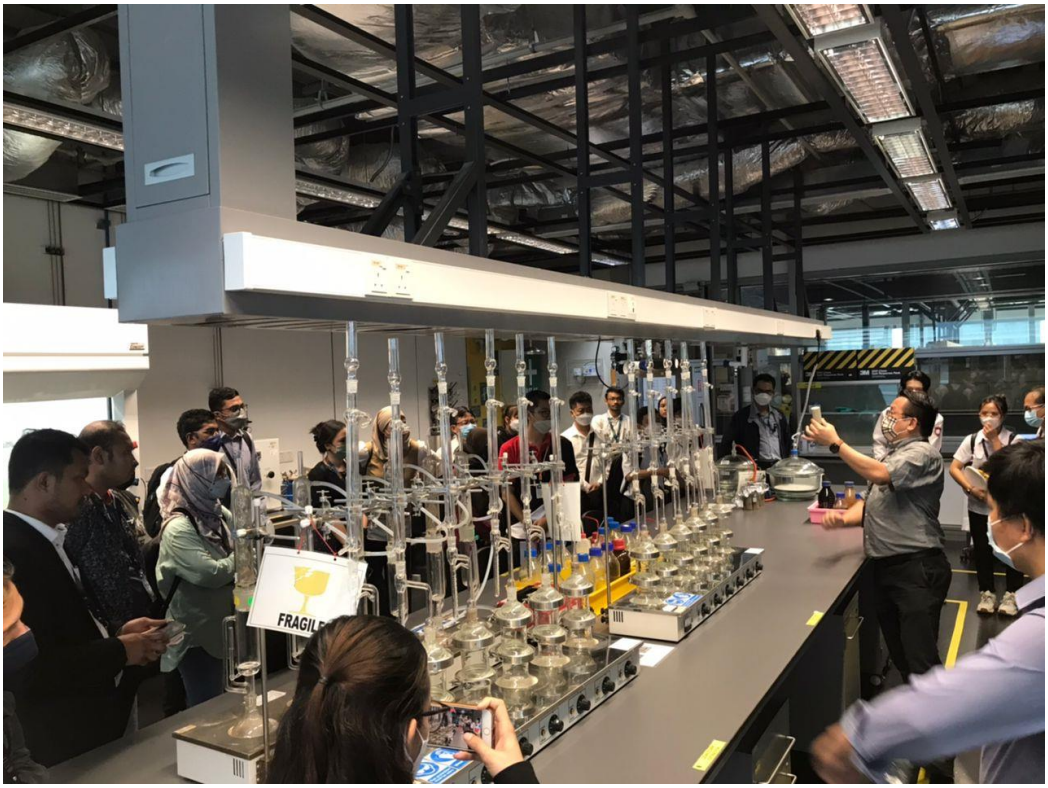
The arrival of the participants actually took place over the weekend. Representatives from UTP had went to the International Airport in Kuala Lumpur to pick up some of the participants who required transportation from the airport to the university. Some of the participants also choose their own mode of transportation to reach UTP. On the actual day of the summer school, all participants are required to register for the event UTP Chancellor Complex.

The situation during registration day at Chancellor Complex

The welcoming remarks were made to welcome all participants right after registration. This is followed by a safety briefing.

The opening remark to welcome all participants was done by Dr. Siti Nur Fathiyah.

The participants were brought for campus tour and laboratory visit before the lunch.



Visit to Petroleum Engineering laboratory.

Visit the UTP Chancellor Hall, the location for graduates' convocation.

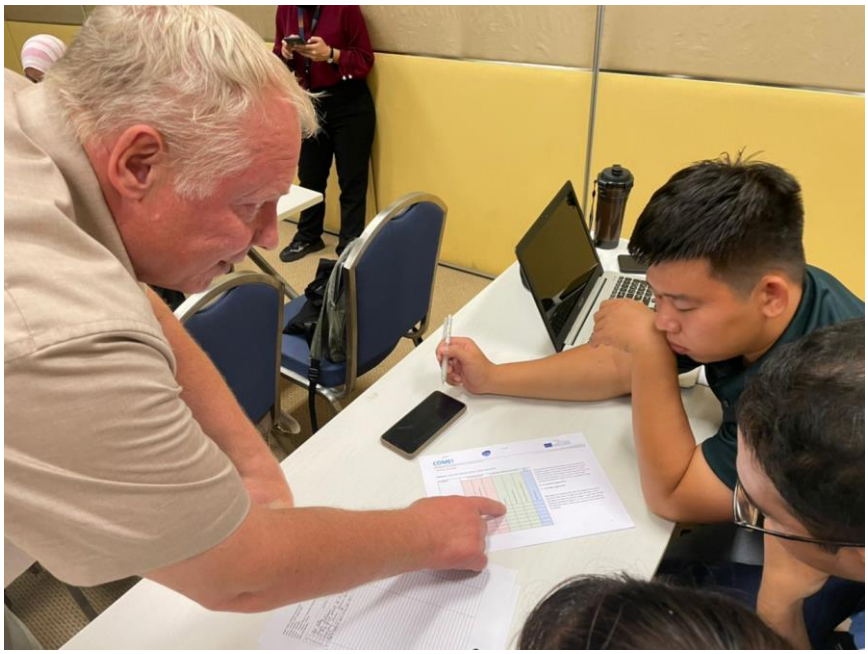
The official opening ceremony of the summer school took place during lunch time, and it was officiated by Associate Professor Dr. Noor Amila Wan Zawawi Abdullah the Director of Research & Management Center at UTP.

Introduction by the Institute Director

Gift exchange with partner universities as token of appreciation were done during the lunch time.

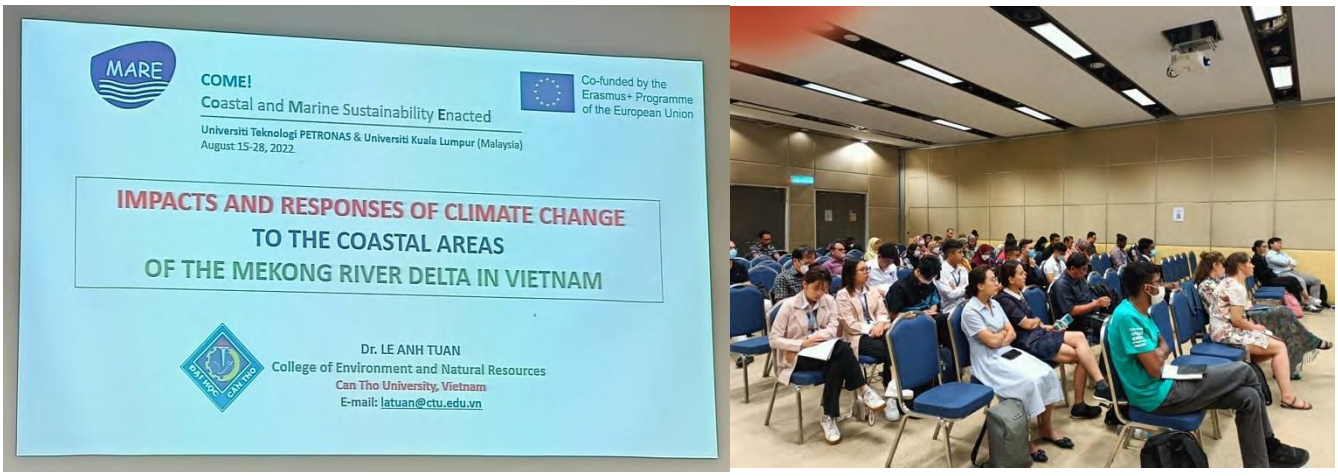
1. LECTURE SERIES

The lecture series were conducted according to the schedule provided as seen in program schedule section of this report. Here are some of the snapshots from the lecture series conducted during week 1 in UTP.

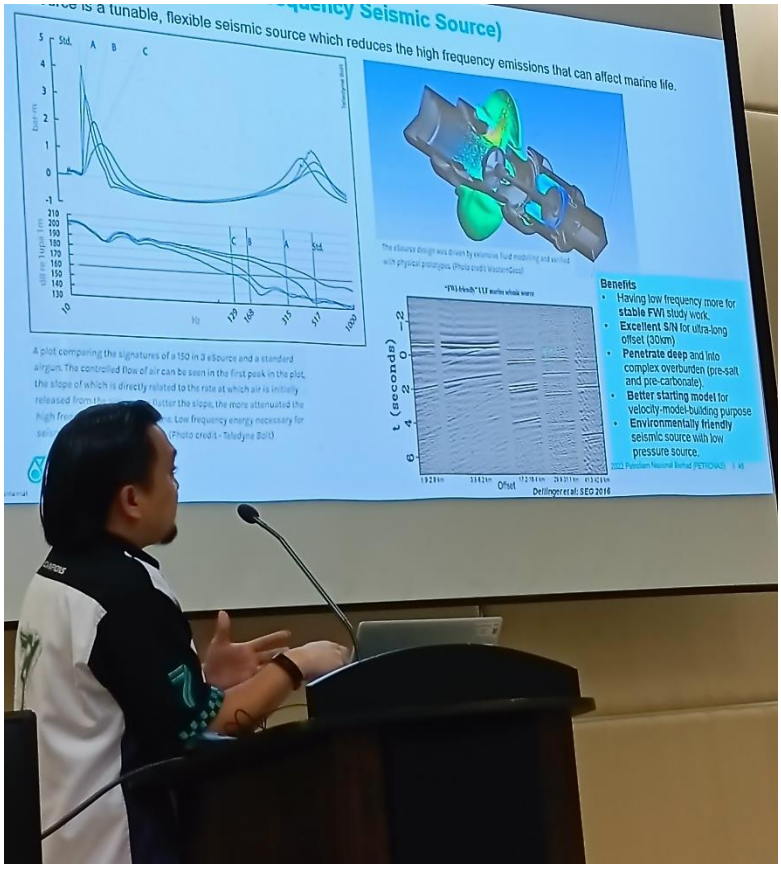


Lecture and hands-on session by Prof. Kalev Sepp from EMU. Title of the lecture is Introduction to global and regional sustainability: from policy concepts to the management action.

Lecture by Prof. Dr. Mohd Fadzil Akhir from UMT
Title: Sea level and coastal changes challenges (case study)

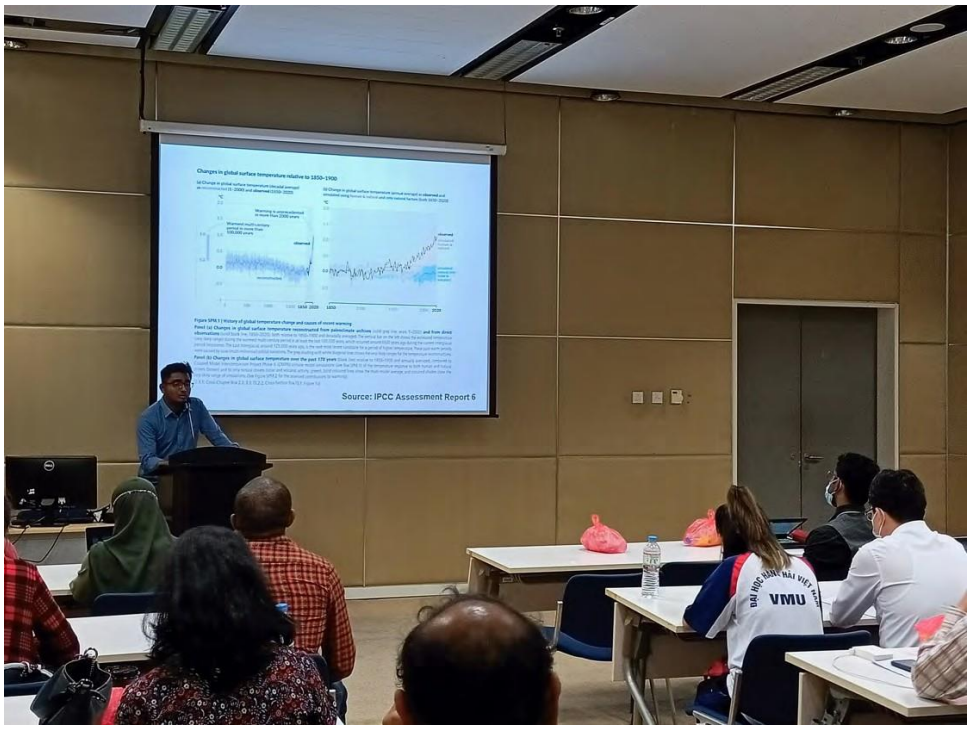


Lecture by Dr Le Anh Tuan, CTU
Title: Impacts and Responsible of Climate Change



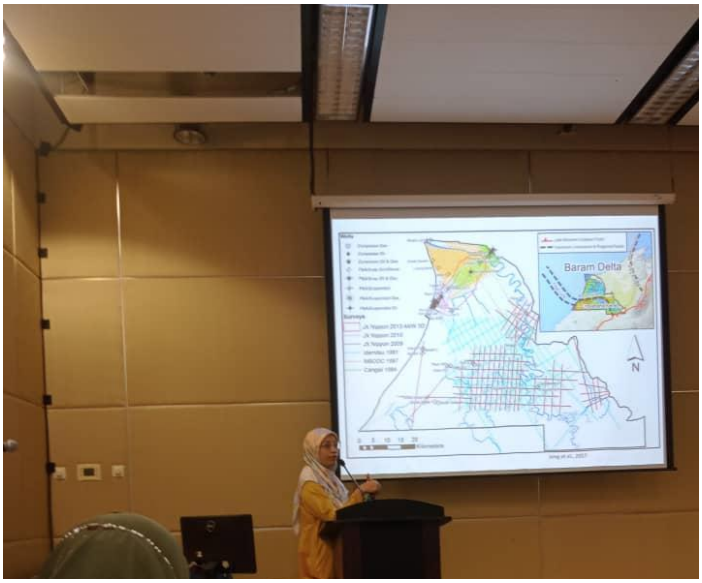
Lecture by Mr. Rahimi from PETRONAS with the title of Marine Seismic Acquisition and its role in sustainable marine environment.

Practical Exercise by Dr. Anne Kull, Estonian University
Title: Defining Ecosystem services of Coastal areas



Lecture by Dr Muhammad Hafeez Jeofry, UMT
Title: Ice Sheet & Marine Sustainability: Sea level rise from ice-sheet melting using CMIP6 model

Lecture by Dr Corienna Abdul Talib, UTM
Title: Environmental Awareness in Conserving Natural Resource Marine Debris



Lecture by Dr Fathiyah
Title: Delta Environment and Hydrocarbon Potential: Present-day Analogue

Lecture by Dr Sandeep Chandola
Title: Exploration Marine and Coastal Sustainability Practices in PETRONAS

2. EXAMPLE OF LECTURE SLIDES FROM TEACHERS PRESENTING DURING THE SUMMER SCHOOL

Some of the presentations materials from the presenters are confidential hence cannot be shown here. A few snapshots from the materials presented during the summer school are shown below for reference.

Example from Dr Teh Hee Min (UTP)

COASTAL AREAS

- Coastal regions have always been a popular place for commerce, recreation and habitation.
- Typical coastal infrastructures include ports, marinas, fishing harbours, roads, railways, power stations, agriculture, recreational resorts, residential property, etc.
- Land adjacent to the sea is much more valuable than inland; therefore, the coastal boundary has been subjected to both reclamation and protection in response to economic pressures.



COASTAL PROBLEMS & CONSTRAINTS


- In many areas of the world, low-lying coastal plains are vulnerable to flooding and erosion due to the action of the sea. This coupled with gradually rising sea levels due to global warming has resulted in loss of beaches and coastal boundaries around the world.
- The prospect of accelerating sea level rise and changes in the frequency and direction of storms presents high degree of **risk and uncertainties** in the design of coastal structures.

Example from Dr Teh Hee Min (UTP)

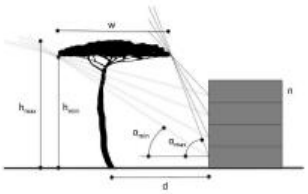
Summer School

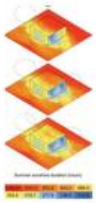
COME! - Costal and Marine Sustainability Enacted

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

Universiti Teknologi PETRONAS & Universiti Kuala Lumpur (Malaysia)
August 15-28, 2022

Positive effects of trees on climate regulation, carbon sequestration and noise reduction





Prof. Daniele La Rosa
dlarosa@darc.unict.it

University of Catania, ITALY
Department of Civil Engineering and Architecture (DICAR)
Laboratorio per la Pianificazione del Territorio e dell'ambiente(LAPTA)

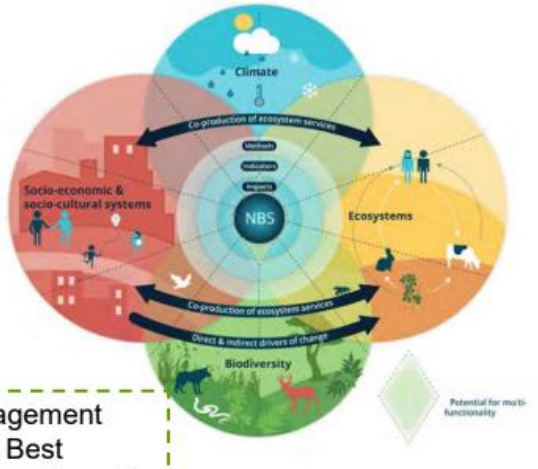
Nature Based Solutions and the city

Nature-based solutions

using and deploying natural ecosystems to provide solutions to several urban issues and improve the overall sustainability of urban environments (Cohen-Shacham et al., 2016).

….nothing new but…..
…a couple of interesting specification

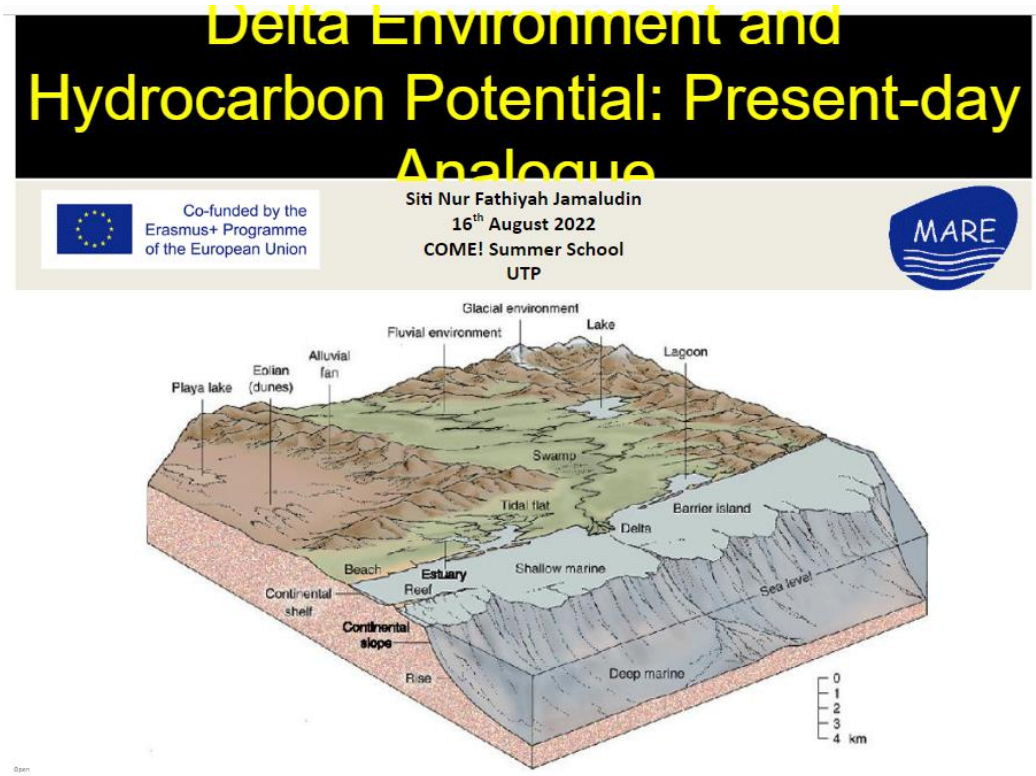
*NBS provide sustainable, **cost-effective, multi-purpose,** and flexible alternatives for various planning* objectives and can significantly enhance **resilience of cities**.

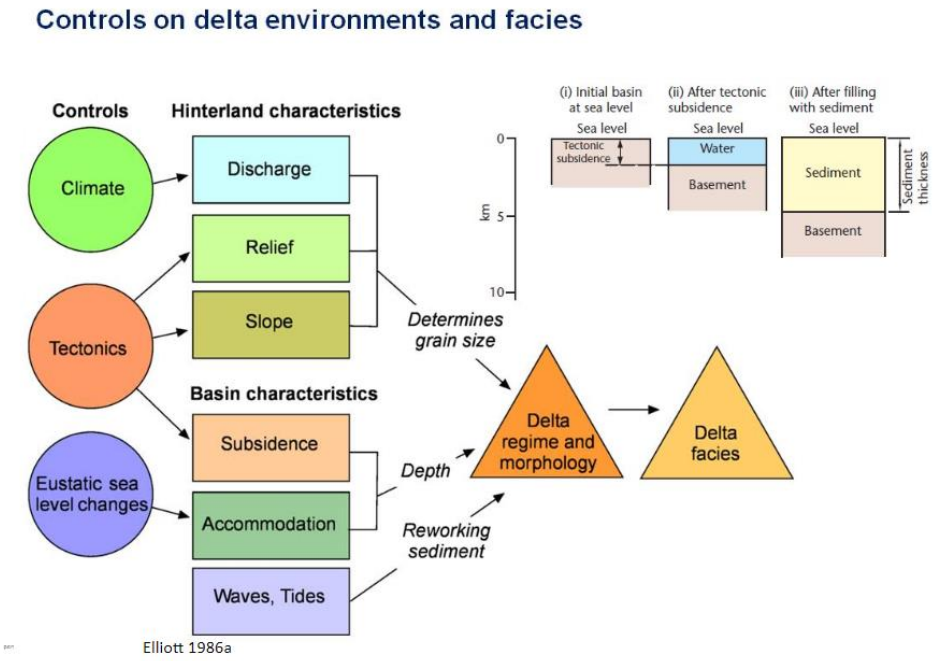


Source Raymond et al. (2017)

Green Infrastructure, use of greenery to management water (Sustainable Urban Drainage Systems, Best Management Practices, Low Impact Development) and to regenerate deprived portions of cities (i.e peri-urban areas)

Example from Dr Danielle La Rosa (UniCT)



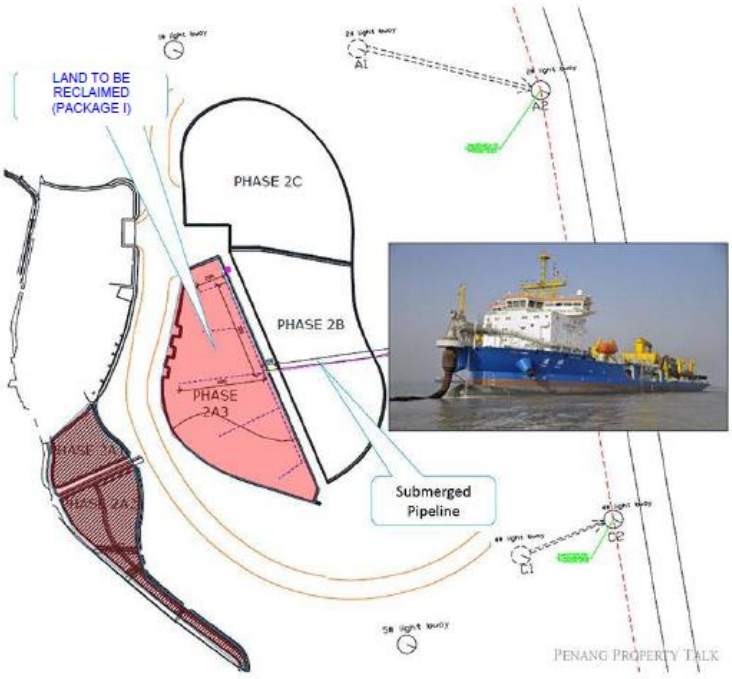


Example from Dr Siti Nur Fathiyah (UTP)

3. TECHNICAL VISIT TO SERI TANJUNG PINANG 2 RECLAMATION

Prepared by Dr. Teh Hee Min (UTP)

The second phase of Seri Tanjung Pinang (STP2) aims to be an exemplar water-front development that encapsulates the best of island living in Penang, Malaysia. STP2 offers a range of residential, commercial and leisure facilities to both local and international investors. Based on the geographical area, STP2 is divided into three packages, which are Package 2A (foreshore of Gurney Drive and the western region of the sand island), Package 2B (the southeast region of the sand island) and Package 2C (the northeast region of the sand island). It is an extension of the fully developed STP1 (Phase I) consisting of 240 acres of land reclamation works. Reclamation of the 253-acre STP2 Package 2A commenced in 2016 and is still underway, and reclamation of the remaining packages with the reclamation size of 507-acres shall kick off at a later stage.



STP2 reclamation packages – Phase 2A, Phase 2B and Phase 2C

In conjunction with the Coastal and Marine Sustainability Enacted Summer School held at Universiti Teknologi PETRONAS, a site visit to Seri Tanjung Pinang 1 and 2, Penang was conducted on the 20th of August 2022. The visit was hosted by Universiti Teknologi PETRONAS and Dr Nik and Associate Consulting Sdn. Bhd. and was funded by Erasmus+ CBHE projects MARE "Marine Coastal and Delta Sustainability for Southeast Asia". The trip was attended by 31 student participants from various institutions. The aim of this field trip was to expose the student participants to one of the largest coastal reclamation projects in Malaysia.

Upon reaching Penang Straits Quay Marina, the student participants were briefed about the Seri Tanjung Pinang 2 (STP2) reclamation project by the Project Manager, Ir. Ts. Nik Abdullah Muaz Nik Mohd Kamel, at the Tanjung Pinang Development site office. The students had a chance to stroll around Straits Quay Marina and visit Tanjung Pinang Control Tower with the guidance from the Project Manager. Subsequently, the participants visited the sand island and E&O Andaman Gallery of STP2. During the visit, the student participants were requested to conduct environmental & socio-economic assessment due to the STP2 reclamation. The students interviewed the Project Managers, engineers and local community to obtain their perspectives and responses with respect to the land reclamation project. The students submitted the group project report upon return to UTP.

Overall, the student participants had a good experience with this field trip. Besides learning from the practicing engineers, they also had a chance to express their views and concerns on environmental and socio-economic impacts due to the STP2 coastal reclamation project.

References:

https://www.easternandoriental.com/property/seri-tanjung-pinang-phase-1/
https://www.stp2.my/stp1-today.php
https://www.penangpropertytalk.com/2017/03/seri-tanjung-pinang-phase-2/

Travel Itinerary and List of participants

Time	Activities
6:45 am	Registration at Chancellor Building
7:00 am	Depart for Penang Stopover @ Kuala Kangsar R&R Reach Penang via the second bridge
9:50 am	Gather @ Straits Quay Mall Field trip to STP2
1:30 pm	Lunch @ Lotus Tanjung Pinang
3:00 pm	Heading back to UTP Dinner @ Taiping R&R
6:30 pm	Arrive at UTP Chancellor Building/Student hostel

No	Name	Institution	Nationality
1	Muhammad Naim bin Mohd Satar	UMT	Malaysian
2	Winfred Marshal	UMT	Indian
3	Abdul Rauf bin Abdullah	UniKL MIMET	Malaysian
4	Muhammad Amir bin Hussein	UniKL MIMET	Malaysian
5	Nurul Huda binti Abdul Razak	UniKL MIMET	Malaysian
6	Mareike De Breuyn	University of Bremen	German
7	Mercedes Isabella Chumbley	University of Bremen	American
8	Diana Nicole Puerto Rueda	University of Bremen	Colombian
9	Sree Lakshmi Santosh	University of Bremen	Indian
10	Malte Ostendarp	University of Bremen	German
11	LE NHU Y	CTU	Veitnamese
12	TRUONG KHA DUY	VNIO	Veitnamese
13	GIAP MINH NHAT	CTU	Veitnamese
14	LAM TAN PHAT	MCD	Veitnamese
15	NGUYEN THAI AN	MCD	Veitnamese
16	PHAN TRONG LUAT	MCD	Veitnamese
17	HOANG KHANH HUY	HCMURNE	Veitnamese
18	NGUYEN PHAM MINH DO	HCMURNE	Veitnamese
19	TRẦN VĂN HOÀNG LONG	HCMURNE	Veitnamese
20	LE DINH LOC	VMU	Veitnamese
21	NGUYEN THI THANH THAO	VMU	Veitnamese
22	BUI THI YEN	VMU	Veitnamese
23	LUONG MINH HUY	VNIO	Veitnamese
24	TRAN CONG KHOI	VNIO	Veitnamese
25	VO QUOC THANH	VNIO	Veitnamese
26	Nurul Balkhis Athirah binti Kamaru	UTP	Malaysian
27	Nurul Najihah Khairul Anuar	UTP	Malaysian
28	Zakiah Zainal Ariffin	UTP	Malaysian
29	Rethanya Yogeswaran	UTP	Indian
30	Eric Joseph Pereira	Facilitator	Malaysian
31	Nasiha Sofwani Binti Mohamad Shi	Facilitator	Malaysian

Photos From the Technical Visit

Photo taken at Tanjung Pinang Control Tower

Visit to Sand Island of STP2

Briefing by the STP2 Project Manager

Group photo with the STP2 Project Manager

Group photo at the sand island of STP2

E&O Galleri Andaman

Group photo at E&O Galleri Andaman

Reading Materials to the participants

Some reading materials were provided to the participants a few days before the trip to Penang Island. The students had ample time to understand the case study before they visited the reclamation site.

Sample of students report from the site visit

Upon returning from the site visit, the students need to do group activities. Here are some of the examples from students' work.

Fig. 1. Location of Seri Tanjung Pinang [1].

Nik Mohd Kamel Nik Hasaan et. Al 2018

Location of Seri Tanjung Pinang

- "On the northeast coast of Penang island, Malaysia"
- Development plan consisting of two phases
  - STP 1
  - STP 2

Learning about STP 1 and STP 2

- STP 1 consists of the Strait Quarry with 240 acres
- STP 2 expected to be 740 acres
- Blueprint from STP has changed throughout the years to become a more realistic version
  - Was expected to be completed in 2022 now pushed to 2028
- Mangrove replacement project at Sungai Acheh in Nibong Tebal
- Construction waste is disposed at dedicated site

Possible Effects of STP2 – Land reclamation

- Habitat destruction
- Oxygen depletion for benthos
- Impacts on marine food webs
- Hindrance of fish migration
- Permanent transformation of coastal mudflats

→ Environmental effects are so severe; the existing mangrove replacement will not be enough as compensation for the damage done. It further only tackles one of the problems created.

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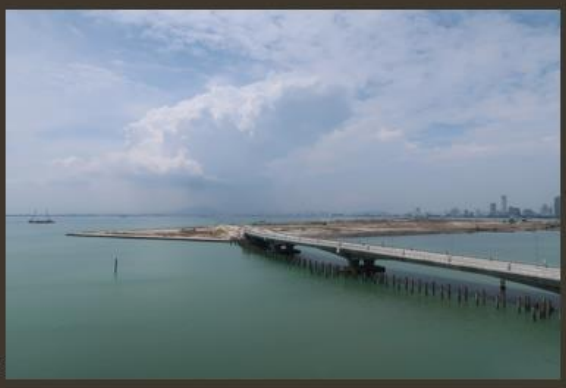

Possible Effects of STP2 – Construction waste disposal

High heavy metal input from disposal sites will lead to metals being deposited in the sediments and can reach toxic levels.

Eventually metals will assimilate within marine food webs.

Pollutants can lead to mortality in juveniles and eventually eliminate breeding grounds.

This leads to negative effects for the fishing industry ex. shellfish and finfish as well as for consumers.

→ Threatens economic and ecological value of coastal area !

(Sivalingam, 1984; Qian et al., 2015)

Pure marine sand is used for the STP2 reclamation. Disposal of heavy metals at STP2 reclamation site is less likely to happen.

https://blog.capterra.com/5-tips-for-recycling-your-construction-waste/

Possible Effects of STP2 –

- Effect on Aquaculture fisherman (One of the Main industry in Penang)
- Not sufficient restoration to compensate for damaged environment. (Replanted Mangrove would take considerable amount of time to reach full potential and contribute to ecosystem).

As advocates for marine life, we strongly believe that there is no truly sustainable solution for these island development projects, they harm not only sea life but livelihood of fishers as well.

https://1i2dne2m97hqripe92mwq9xh-wpengine.netdna-ssl.com/wp-content/uploads/2019/10/18742706_web1_191003-CVA-Kootenay-Ferry-Protest_1-1024x683.jpg

Malaysia fishermen in last-ditch bid to stop Penang reclamation

Fishermen to appeal to federal government over Penang stat create three artificial islets off island's southern shore.

We are all against land reclamation projects, say Penang fishermen

Dineskumar Ragu · November 25, 2021 4:46 PM

142 Shares 105 19 13

One island is enough for Penang

Malaysian state's offshore reclamation plans risk environmental disaster

DOE says proponents of Penang South Reclamation project must submit new EIA report

Cities from the sea: the true cost of reclaimed land

Asia is growing. Literally. From Malaysia to Dubai, luxury developments are rising on artificial islands and coastlines. Everybody wins - except the local sea life and the fishermen who depend on it

by Wade Shepard in George Town

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- https://theaseanpost.com/article/penangs-new-islands-will-kill-marine-life
- Rajamani, Leela & Porter, Lindsay & Dolar, Louella & Rodriguez, Luz & Yobe, Mansor. (2018). Marine Mammals of Coastal Penang Island, Malaysia. Aquatic Mammals. 44. 319-327. 10.1578/AM.44.3.2018.319.
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- Penang reclamation project pending DoE approval (themalaysianreserve.com)
- Penang South Reclamation Project: An Environmental Disaster | BusinessToday

3. CULTURAL AND HERITAGE VISIT

During the summer school in UTP, the students were also brought for cultural and heritage visits to Ipoh and Tanjung Tualang. The objective of this trip apart from exposing them to Malaysian culture is to provide some overview on the evolution of Ipoh and surrounding towns that started as tin mining areas in the yester years. Below are some of the photos from the visit to Ipoh town and Tanjung Tualang Tin Dredge.

Students' participants in Concubine Lane, a heritage-listed area in Ipoh Town.

Students' participants in Concubine Lane, a heritage-listed area in Ipoh Town.

Participants who visited the Tanjung Tualang Tin Dredge, the last dredge in Malaysia.

ACTIVITIES CONDUCTED AT UNIKL MIMET

1. FACILITIES/LAB VISIT

The participants have advantages to visit many laboratories and maritime equipment during the second week of summer school which was hosted by the Universiti of Kuala Lumpur, in their Lumut campus.

Here, the students visited Lumut Port which was within the vicinity of the campus to experience the maritime logistics arrangement of the cargo, ships etc.

Participants at Lumut Port during week 2 of summer school

Apart from that, the participants are also brought to see their laboratories and be able to see the hands-on activity in the laboratory.

Technical staff at UniKL MIMET explain the function of their energy power station in their laboratory.

2. VISIT TO VALE TELUK RUBIAH MARITIME TERMINAL (TRMT)

On Tuesday, 23rd August 2022, all the participants visited Teluk Rubiah Maritime Terminal (TRMT) which belongs to VALE Malaysia Sdn. Bhd. 44 students were able to join the trip to TRMT while few others were not well with 10 academic staffs had also joined. The main objective of the program is for students to understand the roles, efforts and challenges faced by multinational companies in creating a sustainable environment for the community and future generations.

VALE had published this visit in their website (Click Here).

Participants of the summer school who joined the trip to VALE TRMT

Talks by VALE technical staff on the sustainability efforts by their company.

Students' participant at VALE

CONCLUSION

The opportunity to host summer school in August 2022 at Universiti Teknologi PETRONAS (UTP) under the flagship of Erasmus+ MARE project had developed new skills for UTP academic and technical staffs that had directly or indirectly involved with the preparation, arrangement and facilitating this event.

We would like to take this opportunity to thank our partner, UniKL MIMET for co-organizing the summer school and make the event a successful one. We also would like to express our gratitude to the management of both universities for supporting this event and making it smooth.

Arranging and preparation of the summer school taught us about teamwork and improving skills in strategizing and organizing a big international event like this. Based on the feedback provided by the participants, we are hopeful that everyone was able to gain as much knowledge about marine, coastal and delta sustainability from the summer school activities.