

Annexe A: New/Revised Course Content in OBTL+ Format

Course Overview

Expected Implementation in Academic Year (New format)	
Semester/Trimester/Others (specify approx. Start/End date)	
Course Author * Faculty proposing/revising the course	Prof Benjamin Horton
Course Author Email	BPHorton@ntu.edu.sg
Course Title	Sea Level Rise and Coastal Processes
Course Code	ES3103
Academic Units	2
Contact Hours	28
Research Experience Components	

Course Requisites (if applicable)

Pre-requisites	
Co-requisites	
Pre-requisite to	
Mutually exclusive to	
Replacement course to	
Remarks (if any)	

Course Aims

This course aims to provide you with the understanding of the processes that control variations in sea level. You will learn about how sea level changes through time and space, and how understanding the past and the present is key to predicting the future. You will undertake a field trip, to better gain experience in how sediments archive records of the past. You will also carry out a group project on the relationship between global, regional and local sea-level change.

Course's Intended Learning Outcomes (ILOs)

Upon the successful completion of this course, you (student) would be able to:

ILO 1	Define the different mechanisms underpinning variations in sea-level change across spatial and temporal scales.
ILO 2	Compare coastal systems and their response to sea-level change.
ILO 3	Apply relevant procedures to reconstruct sea-level from the geological record.
ILO 4	Illustrate how future projections are made and their limitations.
ILO 5	Evaluate the possible impacts of extreme sea-level events around Southeast Asia.
ILO 6	Evaluate risk posed to coastal communities as a result of sea-level rise.
ILO 7	Accurately communicate relevant scientific knowledge.

Course Content

The course will introduce you to the key concepts that underpin sea-level science. You will explore how sea level has changed through time and the processes that drive spatial variations. We will look at how coastal systems evolve as sea-level changes, and the implications of such evolutions. The class will look at how changes in the solid earth can influence sea level and how changes in sea level are recorded in geological records. Finally, we will look at extremes in sea level and the hazards and risks posed to society. Each topic will be comprised of a single lecture, followed by a tutorial to further explore the concepts. Finally, you will take part in a field trip, to recover geological records of sea level.

Reading and References (if applicable)

This course will be based on original research and review articles, mixing classical papers with the latest research and newly emerging topics. Papers will vary from year to year as new research is published. The core book for the course is: Dawson, Alastair. (2019). Introducing Sea Level Change. Dunedin Academic Press.

Planned Schedule

Week or Session	Topics or Themes	ILO	Delivery Mode	Activities	Readings
1	Introduction	1	In-person		Note: This is an advanced course and a key learning objective is to use scientific literature. Hence, the course literature will consist of original research and review papers that will be provided in advance of tutorials. Papers will vary from year to year as new research is published.
2	Glaciations	1	In-person		Note: This is an advanced course and a key learning objective is to use scientific literature. Hence, the course literature will consist of original research and review papers that will be provided in advance of tutorials. Papers will vary from year to year as new research is published.
3	Waves and Tides	1,2	In-person		Note: This is an advanced course and a key learning objective is to use scientific literature. Hence, the course literature will consist of original research and review papers that will be provided in advance of tutorials. Papers will vary from year to year as new research is published.

Week or Session	Topics or Themes	ILO	Delivery Mode	Activities	Readings
4	Coastal Systems	1,2	In-person		Note: This is an advanced course and a key learning objective is to use scientific literature. Hence, the course literature will consist of original research and review papers that will be provided in advance of tutorials. Papers will vary from year to year as new research is published.
5	Solid Earth	1,2	In-person		Note: This is an advanced course and a key learning objective is to use scientific literature. Hence, the course literature will consist of original research and review papers that will be provided in advance of tutorials. Papers will vary from year to year as new research is published.
6	Geological Sea Level	1, 2, 3	In-person		Note: This is an advanced course and a key learning objective is to use scientific literature. Hence, the course literature will consist of original research and review papers that will be provided in advance of tutorials. Papers will vary from year to year as new research is published.

Week or Session	Topics or Themes	ILO	Delivery Mode	Activities	Readings
7	Extreme Sea Level	1,2, 5	In-person		Note: This is an advanced course and a key learning objective is to use scientific literature. Hence, the course literature will consist of original research and review papers that will be provided in advance of tutorials. Papers will vary from year to year as new research is published.
8	Projections	1,2,4	In-person		Note: This is an advanced course and a key learning objective is to use scientific literature. Hence, the course literature will consist of original research and review papers that will be provided in advance of tutorials. Papers will vary from year to year as new research is published.
9	Risk	1,2, 5, 6	In-person		Note: This is an advanced course and a key learning objective is to use scientific literature. Hence, the course literature will consist of original research and review papers that will be provided in advance of tutorials. Papers will vary from year to year as new research is published.

Week or Session	Topics or Themes	ILO	Delivery Mode	Activities	Readings
10	Project	1,2,3,4,5,6,7			Note: This is an advanced course and a key learning objective is to use scientific literature. Hence, the course literature will consist of original research and review papers that will be provided in advance of tutorials. Papers will vary from year to year as new research is published.
11	Project	1,2,3,4,5,6,7	In-person		Note: This is an advanced course and a key learning objective is to use scientific literature. Hence, the course literature will consist of original research and review papers that will be provided in advance of tutorials. Papers will vary from year to year as new research is published.
12	Project	1,2,3,4,5,6,7	In-person		Note: This is an advanced course and a key learning objective is to use scientific literature. Hence, the course literature will consist of original research and review papers that will be provided in advance of tutorials. Papers will vary from year to year as new research is published.

Week or Session	Topics or Themes	ILO	Delivery Mode	Activities	Readings
13	Project	1,2,3,4,5,6,7	In-person		Note: This is an advanced course and a key learning objective is to use scientific literature. Hence, the course literature will consist of original research and review papers that will be provided in advance of tutorials. Papers will vary from year to year as new research is published.

Learning and Teaching Approach

Approach	How does this approach support you in achieving the learning outcomes?
Lecture	Lectures will pass on the theoretical knowledge required to understand the different components of sea-level change and coastal processes.
Weekly tutorial	Students will be expected to discuss assigned reading material relevant to the weekly lecture topic. They will receive feedback and improve communication skills, critical readings skills and confidence.
Field excursion	Pulau Ubin offers the opportunity to witness how sediments archive past histories of sea-level change. It also offers the opportunity to develop the skills required to collect geological data and to better understand coastal processes.

Assessment Structure

Assessment Components (includes both continuous and summative assessment)

No.	Component	ILO	Related PLO or Accreditation	Weightage	Description of Assessment Component	Team/Individual	Rubrics	Level of Understanding
1	Continuous Assessment (CA): Others([assignments (e.g. term paper, essay)] Continuous Assessment)	1-6	1	30		Individual		
2	Continuous Assessment (CA): Others([class participation] Tutorial Participation)	1-6	1,2,4	10		Individual		
3	Continuous Assessment (CA): Others([group or individual projects/evaluations] Poster Production)	7	2,3,4,5,6	30				
4	Continuous Assessment (CA): Others([presentations] Poster Presentation)	7	1,2,4	30		Individual		

Description of Assessment Components (if applicable)

Formative Feedback

Students will receive scores and work through of correct answers for component 1, direct oral feedback for component 2, both written and oral feedback for components 3 and 4.

NTU Graduate Attributes/Competency Mapping

This course intends to develop the following graduate attributes and competencies (maximum 5 most relevant)

Attributes/Competency	Level
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Course Policy

Policy (Academic Integrity)

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Policy (General)

Students are expected to complete all assigned pre-class readings and activities, attend all seminar classes punctually and take all scheduled assignments and tests by due dates. Students are expected to take responsibility to follow up with course notes, assignments and course related announcements for seminar sessions they have missed. Students are expected to participate in all seminar discussions and activities.

Policy (Absenteeism)

TBL requires you to be in class to contribute to team work. In-class activities make up a significant portion of your course grade. Absence from class without a valid reason will affect your overall course grade. Valid reasons include falling sick supported by a medical certificate and participation in NTU's approved activities supported by an excuse letter from the relevant bodies. There will be no make-up opportunities for in-class activities.

If you miss a seminar session, you must inform your team members and me via email (include email address) prior to the start of the class. Students who miss T-RATs and team in-class activity with valid reasons will earn the team score. Students who miss I-RAT or T-RAT without a valid reason will earn nothing for that session of absence.

For I-RAT scores, we will consider the best of ten I-RATs out of twelve I-RATs. This method will take care of students who miss classes with valid reasons. Students, who miss I-RATs more than twice with valid reasons, may be asked to take a separate test.

Policy (Others, if applicable)

(3) Online Compulsory Assignments

You are required to submit online compulsory assignments on due dates. You have three attempts. The latest score will be considered in the course assessment.

For another example, please refer to <http://www.ntu.edu.sg/tlpd/ta/Pages/Policy.aspx>

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Last Updated By: Sze Chun Chau (Dr)