



INTERNATIONAL VIRTUAL COURSE: OCEANOGRAPHY IN THE FRAMEWORK OF THE SUSTAINABLE DEVELOPMENT GOALS

3 November - 4 December 2020

Handbook

**Study Program of Oceanography
Faculty of Earth Sciences and Technology
Institut Teknologi Bandung**



The Hands-On of International Virtual Course 2020

Study Program of Oceanography

Faculty of Earth Sciences and Technology

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3 November - 4 December 2020

Oceanography in the Framework of the Sustainable Development Goals (SDGs)

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Background

As the largest archipelagic country, Indonesia's seas are vast and contain various types of resources. In addition, by lying between the Indian and Pacific Ocean made Indonesia's seas even richer with its complex interaction. Therefore, it is logical for the country to make its seas a priority in the development, as it is also very promising. However, its marine life is under threat. To overcome this issue, global leaders, including Indonesia, have signed onto the Sustainable Development Goals (SDGs) which includes Goal 14 (Life Below Water) as an effort to conserve and sustainably use the oceans, seas and marine resources for sustainable development by 2030.

Purpose

- To introduce SDGs' importance, particularly the ones related to ocean conservation and utilizations.
- To discuss emerging issues of the ocean, covering from its environment to societal and economic impact.
- To discuss the prospect of marine research and study contribution to SDGs as an innovation for a better ocean.

Program Overview

The main topic of this International Virtual Course is 'Oceanography in the Framework of the Sustainable Development Goals (SDGs)' which will be delivered by class activities. Class activities are held to deliver new insights and knowledge of SDGs' importance in the ocean sector to initiate the discussion of emerging issues and the prospect of marine research and study contribution as an innovation for a better ocean.

Class Activity

Lectures	Participants attend classes where the lecturers deliver materials on specific topics, followed by discussion sessions.
Group Discussion	Students conduct discussions about given tasks and compile a report as an output.

Organizing Committees

- Dr. Irwan Meilano (Executive Advisor)
- Ivonne M. Radjawane, Ph.D (Person In Charge)
- Faizal Ade Rahmahuddin Abdullah, M.Si. (Head of Committee)
- Dr.rer.nat. Rima Rachmayani (Department of Treasury)
- Hanif Santyabudhi S., M.Sc., Ardian Mahiru Rizal, S.Si., Erlin Beliyana, S.Si., Iwan P. Anwar, M.Si. (Department of Secretary)
- Hanif Diastomo, M.Sc., Siti Tamalia Zuraydah, A.Md., Arman Sukarman, Maman Sanukman, Isma Wulandini (Department of Logistic and Network)

Lecturers

1. Dr. Ir. Arifin Rudiyanto, M.Sc. (Deputy for Maritime Affairs and Natural Resources, The Ministry of National Development Planning, Indonesia)
2. Dr. Ir. Augy Syahailatua, M.Sc. (Head of Oceanographic Research Center, Institute Research of Indonesia, Indonesia)
3. Dr. Ir. Luky Adrianto, M.Sc. (Dean of Faculty of Fisheries and Marine Sciences, IPB, Indonesia)
4. Dr. Sunny Sunwook Hong (President of Our Sea of East Asia Network (OSEAN), Republic of Korea)
5. R. Dwi Susanto, Ph.D (Senior Researcher, Univ. of Maryland, USA/ Adjunct Prof, Study Program of Oceanography, ITB)
6. Prof. Saleem Mustafa (Prof., Universiti Malaysia Sabah, Malaysia)
7. Dr. Ejria Saleh (Deputy Director (A & I), Borneo Marine Research Institute, Universiti Malaysia Sabah, Malaysia)
8. Daniel Friess, Ph.D (Lecturer, National University of Singapore, Singapore)
9. Anukul Buranapratheprat, Ph.D (Lecturer, Burapha University, Thailand)
10. Dr. Pei Sun Loh, (Assoc. Prof., Zhejiang Univ., China)
11. Dr. Xiao Xi. (Assoc. Prof., Zhejiang Univ., China)
12. Dr. Si Yulin, (Lecturer, Zhejiang Univ., China)
13. Dr. Irwan Meilano (Dean of Faculty of Earth Sciences and Technology, ITB, Indonesia)
14. Ivonne M. Radjawane, Ph.D. (Head of Study Program of Oceanography, ITB, Indonesia)
15. Dr.rer.nat. Rima Rachmayani (Head of Graduate Program in Earth Sciences, ITB, Indonesia)
16. Dr. Tirto Prakoso (Chairman of the ITB SDGs., ITB, Indonesia)

Participants

The participants of this International Virtual Course program are undergraduate and graduate students with oceanography and marine science and technology background that come from overseas universities.

Program Timeline

The International Virtual Course 2020 will be held on 3 November - 4 December 2020. In the first week participants will attend the opening of the program followed by the first course, which is Introduction of the SDGs. In the second week, the materials will be delivered on the topics of marine environment. In the following week, participants will follow a series of lectures on different perspectives to see our ocean. In the fourth week, the topic will be emphasized on climate change, starting from the physical aspect, paleoceanography approach, to its impact on the community. Finally, in the last week, participants will have a lecture on marine research and study prospects regarding its contribution to the SDGs, followed by the closing event of the program.

Week 1	Tuesday, 3 November 2020	15.30-16.15	Official Opening Ceremony ⁽¹³⁾
		16.15-17.00	Introduction of SDGs ⁽¹⁾
		17.00-17.45	
	Friday, 6 November 2020	14.45-16.00	Opening Speech by Rector of ITB
16.00-17.00		Blue Carbon ⁽¹¹⁾	
Week 2	Tuesday, 10 November 2020	15.30-16.15	Issue and challenge of marine environmental problem ⁽⁴⁾
		16.15-17.00	
		17.00-17.45	
	Friday, 13 November 2020	15.30-16.15	Impact of Ocean Climate Variability on Marine Fisheries and Marine Resources ⁽⁵⁾
16.15-17.00			
Week 3	Tuesday, 17 November 2020	15.30-16.15	Ocean as a livelihood ⁽⁶⁾
		16.15-17.00	Dynamic of marine ecosystem ⁽⁹⁾
		17.00-18.00	
	Friday, 20 November 2020	15.30-16.15	Ocean contribution to social economy aspects ⁽³⁾
		16.15-17.00	
17.00-18.00	Ocean energy ⁽¹²⁾		
Week 4	Tuesday, 24 November 2020	15.30-16.30	Paleoclimate ⁽¹⁵⁾
		16.30-17.30	The impact of climate change on vegetation cover ⁽¹⁰⁾
	Friday, 27 November 2020	15.30-16.15	The impact of climate change to ecosystem and marine community ⁽⁸⁾
		16.15-17.00	
Week 5	Tuesday, 1 December 2020	15.30-16.30	Biodiversity of CTI ⁽⁷⁾
		16.30-17.30	SDGs in Indonesia ⁽¹⁶⁾
	Friday, 4 December 2020	15.30-16.30	Prospect of marine research/study contribution to SDG (innovation for better ocean) ⁽²⁾
		16.30-17.30	

*Time in WIB (UTC + 7)

Class Guidelines

The online course of ITB International Virtual Course on Oceanography in the Framework of the Sustainable Development Goals (SDGs) will be held on 3 November - 4 December 2020. Zoom and Google Classroom will be used to facilitate the classes Platforms. We will send an invitation to your registered email.

In order to successfully completed the course, participants need to do the following daily activities.

1. Join Video Conference (via Zoom)
2. Working on the quiz/task (via Google Classroom)

The schedule of the lectures (video conference) can be accessed through this link: <https://www.oceanography.fitb.itb.ac.id/summer-school-2020/>. We suggest the participants to read and learn the materials first before the video conference started.

There will be a task at the end of the session. We will process your assignment and give a score for each course. The result will be written on an e-transcript from the committee and will be sent to your email.

If you have any inquiries, please do not hesitate to send us an email (summerschoolpsos@gmail.com).

Course

Course	Description
Introduction of SDGs	The course will briefly introduce Sustainable Development Goals (SDGs) in general and SDG 14: Life Below Water in particular. In addition, other ocean-related SDGs will also be discussed.
Issue and Challenge of Marine Environmental Problems in Asia	The course will discuss the issues, challenges, and solutions regarding marine environmental aspects, particularly in Asia with focused on marine litter problems.
Ocean Energy	The course will discuss the present state of ocean energy by including specific issues and challenges, and also introducing the prospect of it regarding the SDGs.
Biodiversity and	This course includes what is Coral Triangle Initiative

<p>Conservation of CTI</p>	<p>(CTI), its role in sustaining biodiversity while also presenting the current state which also includes the issue and challenge.</p>
<p>Life Below Water: Oceanography and Marine Fisheries and Marine Resources</p>	<p>This course will cover the relationship of oceanography and fisheries, oceanography's role in sustaining ocean resources to achieve SDG, and the present state of research and on-field-practice regarding the issue.</p>
<p>Climate Change and Sea-Air Interaction</p>	<p>This course will cover climate change in the scope of paleoceanography and paleoclimate by also discussing the sea-air interaction regarding the climate variability.</p>
<p>Impact of Climate Change to Marine Ecosystem and Marine Community</p>	<p>This course will highlight the effect of climate change to the near and long term of the marine ecosystem and coastal communities. Climate, humans, and marine ecosystem are connected and exerting each other in one big system. The goal of the course is to deepen the understanding of the interaction and recognizing the impact of anthropogenic activities on its dynamics.</p>
<p>Ocean Contribution to Social Economy Aspects</p>	<p>Ocean stores a vast and diverse living and non-living repository of a natural resource. Consequently, humans have benefited from the ocean to leverage its potential to increase human life quality. This course will cover materials from ocean resource management to the present state of policy regarding the topic of ocean contribution to the social economic point of view.</p>
<p>Ocean as a Livelihood</p>	<p>The ocean has provided the opportunity and living hood to ocean communities. Aquaculture as a strategy to supply the ocean product demand is effectively success to decrease the dependency on the fish-catch activities. This course will provide materials on the issue and challenge in aquaculture and its role to achieve ocean-related SDGs.</p>
<p>Prospect of Marine Research and Study to SDGs Contribution for Better Future Ocean</p>	<p>Understanding the ocean system and its dynamics as well as its interaction to anthropogenic activities is vital to achieving ocean-related SDG objectives. This highlight the important role of marine research and its related studies to answer the gaps between</p>

	each element. This course will cover the role and prospect of marine research and study for SDGs implementation and future challenges regarding the topic.
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Course Completion

To complete the program, participants need to attend the entire courses and submit a final report on a given task. Participants that completed the program will be awarded a certificate mentioning student's completion on selected course along with the score. However, to convert the score to index for credit transfer purposes, additional payment is required.

Undergraduate Study Program of Oceanography

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