ONE PLANET - ONE OCEAN: FROM SCIENCE TO SOLUTIONS

Resource Booklet to the 2017 Open Online Course

The Massive Open Online Course (MOOC) “One Planet One Ocean: From Science to Solutions” brings to you to the science and fascination of the ocean. Marine scientists team with economists, lawyers and philosophers to bring you a holistic view of how the ocean functions, how human interactions with the ocean can be understood, and what solutions are available to support both sustainable use and better stewardship of our blue planet.

The Ocean encircles the globe, forming the largest interconnected ecosystem on earth. It provides a huge range of services on which we rely; food, energy, transportation, environmental resilience, but also immaterial benefits such as beauty, cultural identity and recreation that enhance our sense of well-being.

The pivotal role of the ocean in stabilizing climate, enabling a just distribution of economic prosperity and allowing for sustainable management and good governance of human activities is recognized in Goal 14 of the United Nations Sustainable Development Goals that focuses on the Ocean.

In this booklet you find the course resources that you can access through links. Follow the six course modules, each with a series of 10-minute lectures from experts. Access the open-source resources provided, and test your knowledge in the online quizzes.

We intend these resources to be of use to individuals seeking to browse and learn about integrated ocean issues, as well as for teachers, multipliers at the local and regional level and anyone interested in accessing and disseminating ocean knowledge.

Should you have questions, comments or suggestions, or wish to team with us on global ocean literacy, please contact us at oceanmooc@gmail.com.

MODULES: 01 One Planet - One Ocean | 02 Coasts | 03 Marine Ecosystems | 04 Fisheries & Aquaculture | 05 Marine Life & Minerals | 06 Ocean & Climate

www.oceanmooc.org
Module Introduction

This introductory video takes you through the modules and structure of the course. It presents the issues around human interactions with the ocean, and provides the broad framework for each of the modules you find here.

In this module you will hear the views of experts from a variety of disciplines. We present nuggets and insights from science, while realising that ocean sustainability is about human behaviour and human interactions with the ocean. We invite you to continually ask yourselves what this knowledge means to individuals and societies and how it can lead to a better stewardship of the ocean.

Quiz

You can find a Quiz to this Module here!

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In this module, explore how humans interact with the coasts. Start by learning what characterizes coasts, and reflecting on the ocean as a common heritage for humankind. Then look at how coasts are influenced by human activities on land and by the ocean. Subsequently, some possible solutions are presented and you are asked to think about how you would like your coast to look in the future.

Quiz
You can find a Quiz to this Module here!

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## Module Introduction

**Video:** Making Law on the High Seas
**Reading:** Regional Fisheries Bodies

**Video:** Ted Talk by Nicole Cane - 'Sustainable Ocean Management'
**Reading:** HELCOM
**Assignment:** Involved Management

**Video:** Explanation Resilience
**Reading:** Resilience Alliance
**Reading:** Resilience and Ecosystem Services
**Reading:** Ocean Atlas - Invasive Species
**Video:** Valuing Ocean Assets
**Video:** Ted Talk by Pavan Sukhdev - 'Put a Value on Nature!'
**Reading:** How the Sea Serves Us
**Assignment:** Ocean Health Index

**Video:** Antarctic Marine Food Webs
**Reading:** Predators in the Ocean
**Assignment:** Marine Food Web

**Video:** OceanMOOC Scout Interview
**Reading:** The Polar Code
**Assignment:** Rotating Marine Protected Areas

**Video:** Making Law on the High Seas
**Reading:** Regional Fisheries Bodies

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### About this Module

In this module, look beyond and under the ocean surface to explore the fascinating marine ecosystems of our ocean. The introductory video introduces the module structure. After a brief introduction to marine food chains and the fantastic variety of marine ecosystems, we will have a closer look at the mix of interacting stressors and marine ecosystem change and services. Subsequently we look at the natural resilience of life in the ocean and its capability to adapt. Finally, we will present some approaches to reduce anthropogenic stress on marine ecosystems and look into the legal options and challenges.

### Quiz

You can find a Quiz to this Module [here](http://www.oceanmooc.org)!
Module Introduction

This module looks at marine fisheries and aquaculture and how they play an essential role in ensuring global food security. After getting an overview on our Ocean’s finite resources, we look at the complex and fascinating processes and interactions of marine food webs building the basis for the exploitation of marine food. Subsequently, we learn about the management of fish stocks and various types of marine aquaculture. Finally, we explain why innovative aquaculture practices and better fisheries management are essential if we want the ocean to continue being one of the main providers of essential protein and fatty acids for humans.

Quiz

You can find a Quiz to this Module here!

www.oceanmooc.org
**MODULE 5: MARINE LIFE AND MINERALS**

**Module Introduction**

In this module embark on a trip to the past, more precisely 4.3 billion years ago, to when all began. You will learn how both marine life and minerals evolved and how they have been interconnected through eons of time. You will learn about the potential of these resources for the future, how and if we can access them and the legal implications of doing so. Enjoy your time travel!

**Quiz**

You can find a Quiz to this Module [here](#)!
Module Introduction

The vital link between the ocean and the climate of our planet is the subject of this module. How does this work? How can understanding changes in ocean circulation, expected alterations in the ocean's biology and the carbon cycle give us an understanding of the rate, time scales and direction of change in the future? What are possible options to minimise climate change impacts for humans, and should these be implemented on large scales?

Quiz

You can find a Quiz to this Module here!

www.oceanmooc.org
Feedback from Participants

“This course provided me with enough knowledge to better understand the concepts that are used in my profession as it is not a background that I am familiar with.”

“What I enjoyed most about the course was the overview about the current state of the ocean without losing hope/belief that we still might have a chance to stop or reduce the irreversible consequences (of human activities)”

“The course was successful in giving me a chance to get to know about current worldwide scenario of ocean management and protection, and the chance to interact with scientists and students worldwide. The lectures being in the form of animation and videos were effective in explaining the concepts, and inputs from eminent scientists was very helpful. The course made me think of all the aspects of ocean sustainability, like economic matters, geographical differences and the side effects and consequences of solutions for problems we face today.”

“My expectation was to gain more insights in current issues facing our oceans and in each module I indeed gained knowledge that I didn’t have before. Especially within the governance of the high seas.”

About Us

GEOMAR Helmholtz Centre for Ocean Research Kiel is one of the world’s leading institutes in the field of marine sciences. The institute investigates the chemical, physical, biological and geological processes of the seafloor, oceans and ocean margins and their interactions with the atmosphere. Additionally, the centre has successfully bridged the gap between basic and applied science in a number of research areas.

Kiel University is Germany’s northernmost State University and the scientific centre of Schleswig-Holstein. It hosts Centre for Interdisciplinary Marine Science (Kiel Marine Science) as one of its four priority research areas. Within KMS 39 working groups cover expertise from areas such as climate research, coastal research, physical chemistry, botany, microbiology, maths and informatics, economics as well as law and social sciences.

The Cluster of Excellence “The Future Ocean” at Kiel University pursues a research approach that is unique in Germany: marine researchers, geologists and economists join forces with mathematicians, computing, medical, legal, and social scientists to investigate ocean and climate change from a multidisciplinary perspective.

The International Ocean Institute (IOI) is a world-leading, independent, non-governmental non-profit organisation conducting training and capacity building in Ocean Governance globally. It trains young and mid-career practitioners in contemporary approaches to coastal and ocean management, with an emphasis on the moral, ethical and legal values in Ocean Governance (equity and peaceful uses of the ocean).

The SDG Academy works together with the world’s greatest experts on sustainable development – including health, education, climate change, agriculture and other related fields – to offer a comprehensive core curriculum, equipping the next generation of “Sustainable Development Practitioners” to take on the complex challenges facing our planet.

More information on the lecturers can be found here (with hyperlink to the “People” page of the Ocean MOOC website).

Contact

We look forward to your comments, suggestions and feedback at oceanmooc@gmail.com.