



MASSIVE ONLINE OPEN COURSE

OCEAN SCIENCE IN ACTION

ADDRESSING MARINE ECOSYSTEMS
AND FOOD SECURITY IN THE
WESTERN INDIAN OCEAN





INTRODUCTION

This free online course will introduce you to innovative marine technologies and their applications used to tackle the challenges of the sustainable management of marine ecosystems.

Marine autonomous systems are becoming ever more reliable and easy to use for environmental observations – at a fraction of the cost of a research ship. Earth observation satellites monitor the oceans daily, collecting a wide range of marine data, most of which are freely available from global archives. Ocean models of increasingly high resolution make it possible to explore regional ecosystem dynamics and gain insights into reasons for variability and change.

Together with our educators, you will explore how these technologies can form the basis for environmental research and monitoring programmes to deliver decision support for marine policy development and resource management.

Using case studies from the SOLSTICE project, you will learn how marine science can be applied to the sustainable management of local marine ecosystems, and how this may contribute global efforts to meet the UN Sustainable Development Goals.

LEARNING OBJECTIVES

- Explore how we measure and monitor the oceans using earth observation satellites and how the information they provide can inform sustainable coastal development and marine resource management.
- Understand the principles behind ocean models and explore the modelled world of ocean circulation, marine ecosystems and climate change impacts on the marine environment.
- Explore advances of marine autonomous robotic systems and their role in observing our 3-D oceans.
- Investigate how earth observation, modelling and marine robotics are used to address the challenges of sustainable use of living marine resources in a range of case studies in the Western Indian Ocean.
- Explore the environmental changes responsible for the collapse of the Chokka squid fishery in South Africa, and investigate how marine technologies can help us to understand the future dynamics of the squid population.
- Investigate the North Kenyan Bank fishery and mechanisms behind the upwelling system that makes it so productive.
- Explore the small pelagic fisheries of the Pemba Channel and their importance for food security in Tanzania.
- Recognise the importance of the UN Sustainable Development Goals and understand how evidence-based environmental management can contribute to achieving them.



WHO IS THE COURSE FOR?

The course is designed for people working within marine related industries, such as fisheries, in the Western Indian Ocean and those who study this ocean region. The course features introductions to each topic area, and is designed to be accessible to anyone with an interest in ocean management and conservation, the technology used to study the ocean, and the impact of the accelerated climate change on the marine environment.





LEAD EDUCATORS



Dr. Ekaterina Popova
National Oceanography Centre
United Kingdom



Dr. Narriman S. Jiddawi
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Professor Warwick Sauer
Rhodes University
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Professor Michael Roberts
Nelson Mandela University
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Dr. David Obura
Coastal Oceans Research and
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East Africa



Dr. Joseph Kamau
Kenyan Marine and Fisheries
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PML | Plymouth Marine
Laboratory





ABOUT SOLSTICE

SOLSTICE-WIO is a four-year collaborative project funded by the UK Global Challenges Research Fund (GCRF). Launched in October 2017, it brings together recent advances in marine technologies, local knowledge and research expertise to address challenges facing the Western Indian Ocean region in a cost-effective way via state-of-the-art technology transfer, collaborative environmental and socio-economic research and hands-on training.

COURSE DETAILS

The course, **Addressing marine ecosystems and food security in the Western Indian Ocean**, will be available via Future Learn.

Any enquires, please email solstice@noc.ac.uk

Available from October 2020

