**Malta International Winter Course targeting small island states, vulnerable communities and coastal areas located around the Commonwealth**

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Course concept and organisation by the
_Physical Oceanography Research Group (Dept. of Geosciences), University of Malta_,
and the
_Commonwealth Small States Centre of Excellence_
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Malta

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**Scientific & Technical Course Coordinator:** Prof. Aldo Drago (aldo.drago@um.edu.mt)
**Course Director**: Ms. Gabriella Cassola (gabriella.cassola@gov.mt)

## Course Objective

The aim is to empower participants to source, interpret and merge available data, and to consolidate and experience the key skills needed to transform data into knowledge and added value products for marine economic development.

## Course Brief

The course focuses on oceanographic data exploration, elaboration and product creation for Blue Growth. An interesting win-win scenario is emerging where ocean observations for environmental management, for monitoring the health of the marine ecosystem, and for marine safety and surveillance could also serve, in their non-confidential elements, to feed the research and economic sectors for added value and societal benefits at no additional data acquisition costs. In an evolving knowledge-based society, access to key technologies, high quality data, modelling and satellite observations, are perceived to be key ingredients to support sustainable blue growth, especially in the coastal areas where many essential economic activities are occurring at the national scale. This goes hand in hand with the process of extracting essence from data, together with value addition by a wide range of downstream services that are fitting to the user needs, especially in the local scale application scenarios.

More specifically the course is intended to give a broader perspective on the impact of technological development in the marine and maritime sectors, on how the Internet of Things (IoT), Big Data, cloud computing and data analytics can provide new approaches to data management and knowledge creation in a smart technology-enabled future.

The course will also cover current and future methods for data and information exchange, how and where value is created in and between organisations, and the new paradigms for performance and efficiency set by human machine interfaces, like in AI. In particular, the course will consider how all these factors can support Blue Growth, leading to excellence in the marine and maritime economic sectors (such as oil and gas, renewables, living resources, policy, and tourism) and related services. The exchange, harmonisation and interoperability of marine data remains a global bottleneck, and is even more eloquent in those regions where data networks are not operative yet, and where the valorisation of data has still to fully emerge.

Naturally the topic of global marine and maritime economic trends will be highlighted, looking at the future ocean economy, assessing the frameworks and role of states within their geopolitical regions to ascertain a strategic involvement in the evolving marine economy. The coupling of economic excellence with sustainable development to explore effective concrete actions. The relevance of the United Nations' Decade of Ocean Science for Sustainable Development is very clear as it addresses knowledge gaps in ocean science through multidisciplinary research, which in turn, is increasingly reliant upon more integrated data. The Decade also perceives the reliance on ocean science, data and information to effectively inform policies for a well-functioning ocean in support of all the sustainable development goals of the 2030 agenda

## Course Outcomes

1. Providing a well-structured hands-on course, tailored for mid-career professionals

2. Bringing together high-level public officials or officers employed within stakeholder organisations, trade practitioners; industry officials and other stakeholders so as to empower the participants to acquire skills to benefit their countries / organisations.
3. Developing skills and building capacities within the overarching quest to enhance geopolitical dialogue and international scientific cooperation.
4. Promote links with economic operators who already enjoy / about to embark on trading relationships with the Horn of Africa, Caribbean and Pacific region countries.
5. Sensitize the participants to the evolving trends and to Europe's practice and vision in the marine and maritime sector, sharing knowledge and competences for economic excellence that can be transmitted, elaborated and adopted within the national and regional scenarios of the participant's native countries.

## Course Highlights

- Global ocean economic trends with focus on the regions of the participant's countries, and building upon the European experience; the perspective from the European Commission on the future of the oceans through its Integrated Maritime Policy and the Blue Growth initiative; focus on the UN decade on the oceans and implications for coupling sustainability to marine economic development.

- Digital age in Operational Oceanography; coastal observations for an integrated data acquisition system of systems measuring the marine ecosystem in all its interconnected components, serving research, monitoring and industry; overview of current experiences on how to design and deploy data acquisition systems that can cost effectively measure the scale and variability of coastal areas using existing and emerging smart technologies; earth observations, describing the most important satellite platforms (such as the Sentinel constellation) and how to provide useful elaborations of data in a useful form (such as environmental indicators) to users.

- Impact of technological development on Blue Growth; using artificial intelligence (AI), Internet of Things and the infrastructural backbone of Blockchain to create and network innovative products, and support the marine sector with smart and intelligent applications.

- Briefing on the COPERNICUS Marine Environment Monitoring Service (CMEMS); introduction to the CMEMS portal; Practical hands-on session on CMEMS.

- Briefing on EMODnet; Introduction to EMODnet portals; Practical hands-on session on EMODnet.

- Full day dedicated to a Practical Projects Session where participants are mentored in groups to develop applied projects targeted to solve problem focussed situations. Participants will exploit skills acquired in the course, and use on-line data sources to tackle an identified marine-related issue, problem or need, by designing and suggesting smart solutions, assessments or dedicated products and services. This hands-on session gives room for participants to express their talents, ideas and entrepreneurship, working in teams and pitching their work.

## Who may apply

This course is intended for mid-career professionals from Small States and Commonwealth Countries in the Pacific region and the Caribbean region, who are preferably already occupying leading roles or involved in influential job positions. Considering the wide ranging nature of the course, we expect to encompass a cross sector range of participants who exercise their technical and scientific backgrounds in marine-related endeavours and responsibilities, including environmental managers, spatial planners and decision-makers, operational officers, researchers, ocean modellers, IT and computer experts, data scientists, data managers, commercially based experts, trade practitioners, industry officials and stakeholders in general.

The challenge will be to offer a programme that brings together these participants with different skills to achieve a common multidisciplinary, complementary and holistic approach. The course aims to showcase the way to facilitate Blue Growth, namely by breeding a new culture of professionals that are open to different aspects of knowledge, can merge expertise and exploit different levels of competences in favour of integrated solutions and innovative applications and service provision.

Applicants who are in a position to disseminate the experience gained from the course to others will be favoured.

### Pre-requirements to the applicants

Consolidated background in marine sciences; leading / mid-career professional roles in marine affairs; Experience in oceanographic data processing and management; IT fluency.
Preference will be given to participants who are already engaged in (or have the potential to participate in) public or private endeavours favouring research, innovation and value addition in smart marine downstream services. This is in line with the major target of the course to develop a new culture of professionals that can spread their knowledge and skills to achieve excellent performance in favour of Blue Growth.

### Costs

No Tuition fees and bench charges are to be paid per participant. Course materials and the use of computer laboratories and specialised equipment will be provided to all participants.

Bursaries covering travel, accommodation and subsistence costs shall be offered for a number of participants, by the Commonwealth Small States Centre of Excellence. The exact number of participants will be determined according to the number of applicants for this course.

Costs of visa and health insurance will be borne by the chosen course beneficiaries.

### Application

Applicants are encouraged to send in their expressions of interest, with their **passport copy** (biometric data page) and a **motivation statement**. The statement should not be longer than an A4 format.
Additionally, interested participants are to send in the attached **medical form** by the closing date.

Expressions of interest and queries are to be submitted on gabriella.cassola@gov.mt by the deadline, hereunder.

The Commonwealth Small States Centre of Excellence will be receiving expressions of interest until 4th October 2019.