2nd ODYSSEA Summer School
Oceanography and Fisheries in the Mediterranean
Patitiri Village, Alonissos, Greece
2-6 September 2019

View of the main harbor (Patitiri Village) of Alonissos Island, Greece

Co-organized through ODYSSEA Project by:

School of Biology
Aristotle University of Thessaloniki

Department of Environmental Engineering
Democritus University of Thrace

Supported by Thalassa Foundation

OBJECTIVES OF THE PROGRAM
The overall objective of the 2nd ODYSSEA Summer School is to stimulate a scientific dialogue and create a learning experience on oceanography and fisheries in the Mediterranean context. After the end of the program, the trainees will be able to:
• Understand the basic concepts of oceanography and fisheries science
• Use the ODYSSEA project platform for retrieving, managing and processing oceanographic, environmental and fisheries data of the Mediterranean Sea
• Retrieve and use oceanographic datasets and explore international databases on the marine environment
• Learn about the modern developments on marine instruments and sensors used in field sampling for operational oceanographic monitoring
• Learn to assemble fisheries data and monitor marine mammal populations
• Understand fisheries reference points and main stock assessment models and their applicability in fisheries management
• Understand ecological models and their role in marine ecosystem management

PROGRAM NOVELTY
Monitoring and forecasting of the marine environment is a challenge for oceanographers, as in the last few decades marine ecosystems have been subject to intense human pressure (pollution, extensive fishing and aquaculture, coastal erosion, tourism, etc.), coupled with climate change. Therefore, the protection and sustainable economic exploitation of these ecosystems requires real-time monitoring and operational prognostic modeling. In parallel, the volume of data concerning the marine environment collected both by satellites and on-site monitoring instruments is enormous and can be categorized as "Big Data". All these data need to be retrieved, processed, interpreted and then fed into numerical models for reanalysis and forecasting.

The 2nd ODYSSEA Summer School introduces trainees to all stages of operational oceanography and fisheries, aiming towards the Blue Growth of the Mediterranean Sea.

TARGET AUDIENCE
The program intends to train oceanographers and biologists, young researchers, PhD students or professionals at the early stages of their carriers who are interested in learning to manage the available marine environmental, oceanographic and fisheries data to provide targeted and understandable information to the relevant end-users.

VENUE
The 2nd ODYSSEA Summer School will take place at the main Amphitheater of Alonissos Town Hall, Patitiri Village.

SELECTION PROCEDURE

The selection of the trainees (min. 20-max. 25) will be carried out by the two principal instructors (Professor Georgios Sylaios, Department of Environmental Engineering, Democritus University of Thrace and Associate Professor Athanassios Tsikliras, School of Biology, Aristotle University of Thessaloniki). After selection the following trainees have confirmed that they will be attending the 2nd ODYSSEA Summer School:

Name	Country	Name	Country
Ben Salah, Fadoua	Tunisia	Skiani, Evangelia	Greece
Derouiche, Emma	Tunisia	Spiridonidou, Sofia	Greece
Jaziri, Hela	Tunisia	Stavropoulou, Foteini	Greece
Kyriazoglou, Konstantina	Greece	Trypidaki, Eirini	Greece
Ladraa, Dounia	Morocco	Tsiridis, Lazaros	Greece
Lazarte, Menche	Philippines	Xanthopoulos, Savvas	Greece
Malamidou, Anna-Aikaterini	Greece	Kalianiotis, Thanos	Greece
Matzafleri, Niki	Greece	Kalabokidi, Alkistis-Meropi	Greece
Ntanou, Eleni	Greece	Orfanidis, Georgios	Greece
Papageorgiou, Marios	Cyprus	Sarafidou, Georgia	Greece

REGISTRATION AND FEES

Registration and attendance of lectures will be **free of charge**. Students are required to cover all costs related to travel, accommodation, local transportation and other living expenses.

Seaview from Patitiri Village, Alonissos Island, Greece

PROGRAM STRUCTURE - THEMATIC MODULES – DESCRIPTION

Date	Hour	Course Title and Description	Tutor
02/09/2019 Monday	09:00-11:00	**Introduction to Operational Oceanography - The ODYSSEA Concept and its Developments**	**Georgios Sylaios (DUTH)**
02/09/2018 Monday	11:15-13:00	**Introduction to Operational Oceanography - Potential Products and Services**	**Georgios Sylaios (DUTH)**

Introduction to potential products and services generated by operational oceanographic forecasting systems producing forecast of physical and ecological variables. A brief overview of the service chain will be given, from data source through end-user needs to end products, together with the description of the most important products and services such as early warnings, automated reports and alarms, prediction maps disseminated online and via dedicated apps, tailored to user needs. The ODYSSEA project and its contribution to operational oceanography of the Mediterranean Sea will be presented and discussed. The main objectives of the project, the novelties and the workplan and progress to date will be illustrated.

02/09/2018 Monday	15:00 – 18:00	**Introduction to Operational Oceanography - The CMEMS and EMODnet Platforms and Products**	**Nikolaos Kokkos (DUTH)**

The lecture will introduce students on the existing products and datasets accessible through the CMEMS and the EMODnet platforms. Data on ocean bathymetry, geology, seabed habitats, meteorology, physic-chemical parameters, waves, currents, etc. will be accessed through these platforms. Methods and tools to easily retrieve and analyze data using Python and R programming will be shown and explained to students.

Date	Hour	Course Title and Description	Tutor
03/09/2018 Tuesday	09:00 – 13:00	**Oceanographic Field Work**	**Nikolaos Kokkos, Maria Zoidou and Konstantinos Zachopoulos (DUTH)**

Fieldwork onboard a research vessel for oceanographic data collection around Alonissos Island. Collection and analysis of hydrographic, CTD and water quality field data using Ocean Data View software.

03/09/2018 Tuesday	13:00 – 18:00	**Marine mammals monitoring**	**Androniki Pardalou (AUTH)**

Fieldwork onboard a research vessel for training in basic marine mammal monitoring techniques, photo-identification and line transect sampling.

Date	Hour	Course Title and Description	Tutor
04/09/2018 Wednesday	09:00 – 13:00	**Collecting and analyzing fisheries data**	**Androniki Pardalou & Athanassios Tsikliras (AUTH)**

Onshore sampling from small-scale coastal fisheries vessels, fishing gears and catch identification.

04/09/2018 Wednesday	15:00 – 18:00	**Photo-identification data analysis**	**Androniki Pardalou (AUTH)**

Analysis of data collected during the marine mammals monitoring fieldwork.

Date	Hour	Course Title and Description	Tutor
05/09/2018 Thursday	09:00 – 13:00	The ODYSSEA Platform	Maria Zoidou & Nikolaos Kokkos (DUTH)
The main output of ODYSSEA project, the ODYSSEA platform, providing easy access, visualization and retrieval of marine datasets from existing external databases will be presented. Through the use of ODYSSEA platform any user seeking for marine data will have the opportunity to access these datasets in a user-friendly manner. The main elements and novelties of the ODYSSEA platform will be shown. Examples of data services provided to end-users as oil platforms, ports and fish farms will be given to students.			
05/09/2018 Thursday	15:00-18:00	The ODYSSEA Platform Dashboard	Konstantinos Zachopoulos & Nikolaos Kokkos (DUTH)
Analysis of historic data and forecasts through the ODYSSEA Platform dashboard will be shown. Making easy diagrams and reports using the ODYSSEA platform will be shown. Operational examples for data analysis of winds, waves, temperature, salinity and chlorophyll-a for platforms, ports and fish and mussel farms.			
Date	Hour	Course Title and Description	Tutor
06/09/2019 Friday	09:00-12:00	Fisheries stock assessment and management	Athanassios Tsikliras (AUTH)
The main fisheries stock assessment models used in data-poor areas (CMSY, AMSY, LBB) and the relevant fisheries reference points will be presented along with the ecological indices that are used to determine the effect of climate and fisheries on marine populations and ecosystems.			
06/09/2019 Friday	12:30-15:00	Ecosystem Modeling in the Concept of ODYSSEA	Donna Dimarchopoulou (AUTH)
Ecosystem models using Ecopath with Ecosim (EwE) represent a static, mass-balanced snapshot of the ecosystem, i.e. the species it contains and their trophic interactions, covering the entire trophic spectrum from lower to higher trophic levels, including catches per fleet. EwE models have been widely used to assess the impact of fishing on marine ecosystems, address ecological questions, and, through temporal and spatial simulations, to explore management policy options and model the effect of environmental, meteorological and oceanographic changes.			

STUDENT CREDITS
Participants successfully attending the Summer School will be awarded a certificate of attendance, which will provide them with 2 ECTS.

USEFUL INFORMATION
Students are required to bring their own laptop with R and Python programming language already installed.

PRACTICAL INFORMATION

Location and access: Alonissos is a small island belonging to northern Sporades Islands of the western Aegean Sea. The standard way to reach Alonissos is through the port of Volos, a coastal city in central Greece with no airport. However, during the summer months Alonissos is directly connected to Thessaloniki on a daily basis with high speed ferries. Thessaloniki port is almost an hour far from the airport by bus.

Accommodation: participants should make their own accommodation arrangements. A list of hotels and rooms to let is provided at the Alonissos Municipality website (https://alonissos.gr/en/).

ODYSSEA

SHORT CVs OF TUTORS

Donna Dimarchopoulou, Aristotle University of Thessaloniki, is a PhD student who holds a BSc degree in Biology and an MSc degree in Hydrobiology-Aquaculture, both from the Aristotle University of Thessaloniki. Her research activity focuses on marine biodiversity, fish biology, stock assessment and fisheries management, and marine ecosystem modeling. She is an ECOPATH, GIS and stock assessment certified expert. She has published 12 peer-reviewed journal articles and 25 other items.

Nikolaos Kokkos is a PhD graduate of the Department of Environmental Engineering, Democritus University of Thrace, Greece. Currently he works in ODYSSEA and HERMES research projects. He speaks English fluently and he is experienced in the numerical modeling of coastal hydrodynamics and biogeochemical processes.

Androniki Pardalou holds a BSc degree in Biology and an MSc in Oceanography. Her research activity focuses on marine fisheries and the conflicts between marine mammals and coastal fisheries, as well as on MPA management. She is a GIS and stock assessment certified expert. She is a certified Open Water Diver. She has published 5 journal articles and 10 other items

Professor Georgios Sylaios, Democritus University of Thrace, is a graduate of the Department of Geology, University of Patras, Greece. He works at the Department of Environmental Engineering specializing in the 'Management and Modeling of Coastal Aquatic Systems'. He has been the Greek representative in the International Scientific Committee of UNESCO for Ecohydrology and national representative in the International Scientific Committee for the typology and classification of coastal ecosystems according to the WFD. His published work comprises of 72 scientific journal papers, 9 book chapters and more than 50 international conference proceedings with works in a broad field of coastal hydrodynamics, ecosystem modeling and water quality.

Associate Professor Athanasios Tsikliras, Aristotle University of Thessaloniki, School of Biology, focuses his research on fish biology, stock assessment and fisheries, the effect of climate on fish populations, and ecosystem management. He has been involved in 30 projects, serves as associate editor in 3 journals and editorial board member in 5, and chairs the ICES Working Group on Small Pelagic Fishes, their Ecosystems and Climate Impact. Author of 70 journal articles, 2 books, 12 book chapters and 1800 other items. His work has received over 2000 citations (h-index=22).

Konstantinos Zachopoulos, Democritus University of Thrace, is a Marine Scientist who holds a BSc degree in Marine Sciences in University of the Aegean and an MSc degree in Marine Renewable Energy in Heriot Watt University, Orkney Islands Campus. He is currently a PhD candidate in the Department of Environmental Engineering at the Democritus University of Thrace in Greece. He specializes in marine renewables, satellite image analysis and numerical modeling.

Maria Zoidou, Democritus University of Thrace, is a PhD student in the Department of Environmental Engineering at the Democritus University of Thrace in Greece, who holds a degree in Chemical Engineering and an MSc degree in Environmental Systems Management. Her research activity focuses on coastal systems modeling and ecosystem services.

SUMMER SCHOOL SECRETARIAT
Maria Zoidou, DUTH PhD candidate, mzoidou@windowslive.com

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