MARITIME ROBOTICS IN BLUE ECONOMY

TRAINING COURSE

15- 19 MAY 2023

Interreg ADRION ADRIATIC-IONIAN
European Regional Development Fund - Instrument for Pre-Accession II Fund

MARBLE

UCG
UNIVERSITÀ DEGLI STUDI DI TRIESTE
mare FVG DIH AgriFoodCroatia
Faculty of Electrical Engineering and Computing
OGS National Institute of Oceanography and Applied Geophysics

MARITIME ROBOTICS IN BLUE ECONOMY

TRAINING COURSE
15- 19 MAY 2023

THE AIM OF THE TRAINING IS

To foster knowledge and skills on sustainable blue economy in the Adriatic-Ionian Area and enhancing the importance of education and of innovative approaches based on new technologies.

THE VENUE

University Trieste
Campus Piazzale Europa, 1
34127 Trieste (TS) Italy
Building D - Meeting Room 1A

MARBLE PROJECT

The MARBLE project aims to raise competences and skills in maritime robotics application in the domain of blue economy by supporting the preparation of an innovative joint master programme "MARBLE – Maritime Robotics in Blue Economy" and implementation of joint training organized by a network of universities, research organizations, business clusters, and a digital innovation hub. The main challenges tackled in this project are the need for intersectoral and technological skills in Blue Economy education and the lack of an international interdisciplinary sustainable-minded Master programme dedicated to Maritime Robotics in Blue Economy.

THE TRAINING WILL INVOLVE STUDENTS FROM

- Italy
- Greece
- Montenegro
- Croatia
- Bosnia & Herzegovina

THE PARTNERSHIP

UCG
UNIVERSITÀ DEGLI STUDI DI TRIESTE
mare FVG DIH AgriFoodCroatia
Faculty of Electrical Engineering and Computing
OGS National Institute of Oceanography and Applied Geophysics

Interreg ADRION ADRIATIC-IONIAN
European Regional Development Fund - Instrument for Pre-Accession II Fund
EUROPEAN UNION

MARBLE

SPECIAL EVENTS!

In addition to lectures and tutorials, the training programme includes special events, site visits, hackathons tutorials and networking activities to enrich the learning experience.

OGS LABORATORY: TESTING TANK, A SHIP MODEL BASIN

INNOVATION SHIPYARD AT BENETEAU YACHT

HACKATHON TUTORIAL

SHIPBUILDING INDUSTRY AT FINCANTIERI

MARINE TECHNOLOGY AT SAIPEM

TRIESTE CITY HUNT

Interreg ADRION ADRIATIC-IONIAN
European Regional Development Fund - Instrument for Pre-Accession II Fund

MARBLE

AGENDA

TRAINING COURSE
15- 19 MAY 2023

MONDAY, MAY 15, 2023

TIME	DESCRIPTION
8:30 am – 10:00 am	Registration
10:00 - 10:30 am	**Opening Session - Welcome Speech** Maria Cristina Pedicchio, University of Trieste
10:30 am – 11:00 am	**MARBLE project presentation** Speaker: prof. Stjepan Bogdan, University of Zagreb Faculty of Electrical Engineering
11:00 am – 11:30 am	**Port of Trieste: Innovation in the submarine field** Speaker: Vittorio Torbianelli, Secretary General of the Port Network Authority of the Eastern Adriatic Sea
11:30 am – 12:00 pm	**Welcome Presentation** by University of Trieste student representative
12:00 pm - 12:30	**Networking Session** Introduction and groups
12:30 pm – 2:00 pm	Lunch Break
2:00 pm– 6:00 pm	**Networking Session: let's start!** Trieste City of Science "Treasure Hunt"
6:00 pm – 8:00 pm	Free time
8:00 pm – 10:00 pm	Social Dinner

AGENDA

TRAINING COURSE
15- 19 MAY 2023

TUESDAY, MAY 16, 2023

TIME	DESCRIPTION			
9:00 am – 10:00 am	**Hackathon Kickoff: Problem Statement and Rules** Speakers: Krešimir Kovač, AgriFood Croatia and Prof. Mariangela Scorrano, University of Trieste			
10:00 am – 11:00 am	**Visual Simultaneous Localization and Mapping (SLAM)** Lecturer: Prof. Dinko Osmanković, University of Sarajevo			
11:00 am – 12:00 am	**Underwater acoustic communication systems** Lecturer: prof. Igor Radusinović, University of Montenegro			
12:00 pm – 2:00 pm	Lunch Break			
2:00 pm – 4:00 pm	**TUTORIAL 1**	**TUTORIAL 2**	**TUTORIAL 3**	**TUTORIAL 4**
	Robotic vision	**Underwater acoustic channel modeling and network simulation**	**Control of Single and Multiple Underwater Robotic Vehicles**	**Start a robot in Docker Terminal**
	by Prof. Dinko Osmanković, University of Sarajevo	by Prof. Slavica Tomović, University of Montenegro	by Prof. Charalampos Bechlioulis, National Technical University of Athens	by Filip Zorić, University of Zagreb Faculty of Electrical Engineering

AGENDA

TRAINING COURSE
15- 19 MAY 2023

WEDNESDAY, MAY 17, 2023

TIME	DESCRIPTION			
9:00 am – 10:00 am	**Acoustic techniques and submersible dives for studying submerged fault zone** Lecturer: Prof. Stefano Parolai, University of Trieste			
10:00 am - 11:00 am	**Internet of Floaters for Fish Stock Assessment** Lecturer: Prof. Roee Diamant, University of Zagreb Faculty of Electrical Engineering and Computing			
11:00 am – 11:30 am	**The Science Regional System and Trieste a City of Science** Lecturer: Prof. Maria Cristina Pedicchio, University of Trieste			
11:30 am – 12:00 pm	**Site-Visit: preparation** Introduction and logistic details			
12:00 pm – 1:30 pm	Lunch Break			
2:00 pm – 4:00 pm	**Site Visit 1**	**Site Visit 2**	**Site Visit 3**	**Site Visit 4**
	Testing Tank: Ship Model Basin OGS	**Marine technology and subsea robots (ROV)** Saipem	**Shipyard: high-tech shipbuilding industry's sectors** Fincantieri	**Shipyard: industry and innovation** Beneteau Yachts

AGENDA

TRAINING COURSE
15- 19 MAY 2023

THURSDAY, MAY 18, 2023

TIME	DESCRIPTION
9:00 am – 10:00 am	**Exploring the Ocean and the Seabed: oceanographic case studies where marine robotics can be applied** Lecturer: Manuel Bensi, Italian National Institute of Oceanography and Experimental Geophysics - OGS
10:00 am - 11:00 am	**Exploring the Unknown: A Journey to Antarctica with the Laura Bassi** Lecturer: Florence Colleoni, Italian National Institute of Oceanography and Experimental Geophysics - OGS
11:00 am – 12:00 am	**Underwater acoustic pollution** Lecturer: Alice Affatati, OGS & University of Trieste
12:00 pm – 2:00 pm	Lunch Break
2:00 pm– 4:00 pm	**Site Visits: working groups** Restitution session preparation

AGENDA

TRAINING COURSE
15- 19 MAY 2023

FRIDAY, MAY 19, 2023

<table>
<tr><th>TIME</th><th colspan="3">DESCRIPTION</th></tr>
<tr><td>9:00 am – 10:00 am</td><td colspan="3">Heterogeneous autonomous robotic system in viticulture and mariculture
Lecturer: Prof. Zdenko Kovačić, University of Zagreb Faculty of Electrical Engineering</td></tr>
<tr><td>10:00 am - 12:00 am</td><td>Special Lecture Series #1</td><td>Special Lecture Series #2</td><td>Hackaton Track</td></tr>
<tr><td></td><td>Modeling, Sensor Fusion, and Identification of Underwater Robotic Vehicles by Prof. George C. Karras, National Technical University of Athens</td><td>Innovation scenario for maritime technologies in FVG Region and the role of a technology cluster in the innovation and production chain
by Prof. Giorgio Sulligoi, (University of Trieste), Carlo Krašković (mareFVG), Vincenzo Armenio (University of Trieste) and Paolo Diviacco (OGS)</td><td>Tutorial on MARUS marine robotics simulator</td></tr>
<tr><td>12:00 pm – 2:00 pm</td><td colspan="3">Lunch Break</td></tr>
<tr><td>2:00 pm - 4:00 pm</td><td colspan="2">Site Visits: Restitution Session
Student Presentations and Discussion</td><td rowspan="3">Tutorial on machine learning
Brainstorming</td></tr>
<tr><td>4:00 pm - 4:30 pm</td><td colspan="2">Risks in engineering
Lecturer: Prof. Hrvoje Pandžić, University of Zagreb Faculty of Electrical Engineering</td></tr>
<tr><td>4:30 pm - 5:00 pm</td><td colspan="2">How Universities can help the development of soft skills
Lecturer: Giada Pianigiani, University of Trieste</td></tr>
<tr><td>5:00 pm</td><td colspan="3">Closing Ceremony</td></tr>
</table>

Interreg ADRION ADRIATIC-IONIAN
European Regional Development Fund - Instrument for Pre-Accession II Fund

MARBLE

TRIESTE

CITY OF SCIENCE

Trieste boasts a long tradition as a dynamic hub for research, science and innovation, focused on sustainable growth and development, with an impact that extends beyond Italy to the rest of Europe and the developing world. It is internationally renowned for the high concentration of scientific institutions. The city hosts overall more than 30 national and international centers and companies working in research and higher education, 5000 permanent foreign scientists and some 13000 students and researchers.

Research Institutes, Universities, International Organizations and relevant scientific stakeholders founded the "Trieste City of Science" born in 2007 under the agreement of the "Protocol" aimed at:

- Disseminating scientific culture
- Supporting activities for the local economy based on knowledge and innovation
- Promoting Advanced Training
- Attracting Italian and foreign students and researchers
- Services for resident researchers and students
- Enhancing relations between research and business
- Organizing urban and territorial spaces
- Fostering social involvement through events, visits and other initiatives

ESOF2020
EUROSCIENCE OPEN FORUM
TRIESTE

Moreover, Trieste has been nominated European City of Science 2020 under the initiative of the European Open Science Forum (ESOF). For the first time in its history, ESOF reached beyond the national borders of its host country. As a Central European city, Trieste was committed to strengthening the links with Central and Eastern European scientists, entrepreneurs, policy makers and citizens, thus making a crucial step towards a truly open and inclusive Europe. The city's natural spirit of openness and inclusiveness was expressed in the motto that Trieste had chosen for ESOF2020: "Freedom for science, science for freedom".

TRIESTE

CENTER OF THE MITTELEUROPA

Trieste is located at the Italian border close to Slovenia. It is a medium-sized city full of attractiveness and facilities as well as restaurants, bar, theaters, beaches and mountains.
The web reports: “A unique atmosphere can be felt in Trieste, as a border town, a melting pot of at least three cultures: Latin, Slavic and German. It has a retro flavour of its own, between historic literary cafés and monuments from the past as an important city of the Habsburg Empire”.

LOGISTICS

Transportation:

In order to reach the city of Trieste, there are several options available.

By plane

- Trieste Airport | 33 km far from the city;
- Venice International Airport | 145 km far from the city
- Ljubljana Airport | 114 km far from the city

By Train

- from Italy;
- from Slovenia
- from Austria

By car through the motorway “A4”

Considering the **accommodation** there are also several options at different costs depending on the services required: from youth hostels to high rate hotels located in the city centre. Among others:

- Controvento Hostel - https://www.controventohostel.com/
- Hotello Hostel - http://www.hotello.space/
- 3* B&B Hotel Trieste - https://www.hotel-bb.com/it/hotel/trieste
- 3* Hotel Roma - http://hotelroma-trieste.it/
- 3* Hotel Milano - http://hotelmilanotrieste.com.es/
- 3* Hotel Centrale - http://www.triestehotelcentrale.com/
- 3* Hotel Alla Posta - http://www.albergopostatrieste.it/
- 4* Urban Hotel Design - http://www.urbanhotel.it/
- 4* Hotel Continentale - http://www.continentalehotel.com/

LOOKING FORWARD TO MEETING YOU IN TRIESTE!

For further info please contact
marble@ogs.it