UPC studies

BACHELOR'S DEGREE IN MARINE SCIENCES AND TECHNOLOGIES

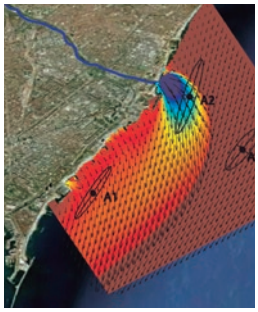
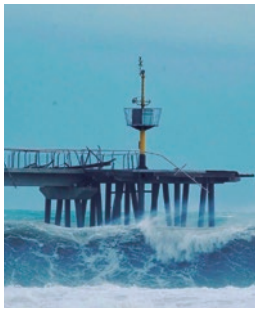
Barcelona School of Civil Engineering
Vilanova i la Geltrú School of Engineering
Barcelona School of Agri-Food and Biosystems Engineering

UNIVERSITAT POLITÈCNICA DE CATALUNYA
BARCELONATECH

BACHELOR'S DEGREE IN MARINE SCIENCES TECHNOLOGIES

3
participating schools:
ETSECCPB, EPSEVG, EEABB

On the bachelor's degree in Marine Sciences and Technologies you will study the marine environment using twenty-first-century tools and technologies. The bachelor's degree will allow you to tackle four major areas of knowledge on the marine and coastal environment: oceanography, marine technologies and biotechnologies, the conservation and sustainable management of marine resources and the effects of climate change.


We live in a world that will undergo profound changes, in terms of both its climate and its demographics, at a much faster rate than it has until now. Because of these changes, society must, in the near future, face generally unforeseeable problems and challenges that will require professionals who can offer innovative and sustainable solutions. Graduates in Marine Sciences and Technologies will be a step ahead as far as traditional marine sciences are concerned, because they will be able to contribute scientific and technological skills and a combined approach using fieldwork, laboratory and research tools. Because of its cross-disciplinary nature, the bachelor's degree in Marine Science and Technology has two majors, which are taken in the final year of the degree at different UPC schools: the major in Marine Sciences and Engineering and the major in Marine Technologies.

Curriculum

This information may be subject to change.
Up-to-date information is available at upc.edu

240 ECTS

1st year

Environmental Biology	6
Environmental Chemistry	6
Environmental Physics	6
Fundamentals of Geology	6
Fundamentals of Mathematics for Environmental Science	6
Geology and Coastal Geomorphology	6
Marine Biology Chemistry	6
Marine Chemistry	6
Marine Physics	6
Mathematics for Environmental Science	6

2nd year

Coastal Water Cycles and Continental Inputs to the Sea	6
Environmental Statistics	6
Further Mathematics for the Environment	6
Marine Environmental Impact	6
Marine Physicochemical Processos	6
Geographic Information System and GNSS	6
Marine Ecology, Ecosystems and Production Processes	6
Marine Pollution: Source, Transport and Impact	6
Mathematics in Marine Sciences	6
Statistical Methods in Marine Sciences	6

3rd year

Computational Analysis and Smart Solution Tools	6
Global Biogeochemical Cycles	6
Ocean Biological Processes	6
Marine Geodynamics	6
Planetary Atmospheric and Ocean Circulation	6
Experimental Field and Laboratory Techniques	6
Integrated Modelling of Systems Marine	6
Instrumentation and Data Analysis in Marine Sciences	6
Living, Renewable and Non-Renewable Marine Resources	6
Remote Sensing and Sensors	6

Compulsory

2 internationally renowned research facilities

3 approaches: experimentation, field observation and modelling

30 research centres and institutions for work placement

Professional opportunities

The bachelor's degree in Marine Sciences and Technologies covers coastal areas, the continental shelf and the open sea, and its graduates will be able to work in areas as diverse as the study of the effects of climate change, which highlights the need for specialists in this field; operational forecasting and continuous monitoring for ocean exploration and the exploitation of marine renewable energies; the prediction and prevention of marine hazards; and the application of new remote sensing techniques that aim for the conservation, protection and sustainable management of marine resources and biodiversity. The socioeconomic impact of all of the above will be taken into account.

Your bachelor's degree!

If you enjoy science, the sea, technology and the environment, you're curious to find out how fascinating—and fragile—our blue planet is or you're concerned about the rapid changes that the planet is undergoing and want to help mitigate them, this is your bachelor's degree! We will provide you with the knowledge you need to become a high-performing professional who is conversant with the cutting-edge sciences and technologies that can help us to overcome the marine environmental challenges that societies all over the world, and particularly in coastal areas, will face in the near future.

Languages of instruction

You will take subjects taught entirely in English, which will, together with the B2 English level that you will have attained by the end of the bachelor's degree, help you to perform effectively in an international context.

Go international!

You can go abroad for a semester or a whole academic year to take courses or do your bachelor's thesis thanks to the mobility agreements and networks in which we participate, such as Erasmus+, K107, CINDA, Magalhães / SMILE and TIME.

Supervision

We offer academic supervision and tutoring, which involve continuous monitoring of your academic progress and will help you through the various stages of the degree. You will have the option to participate in the national and international scientific projects in which the degree's teaching staff are permanently involved.

Work placement

You will go on work placement and field trips during the degree. In your final year you can go on work placement at national and international companies and research institutions in the world's most technologically developed countries to gain up-to-date professional experience.

4th year

You will take one of the majors (30 ECTS credits) and optional subjects that will allow you to come into direct contact with the marine environment.

Coastal Hydromorphodynamics	6
Coastal Infraestructure: Impact and Integrated Management	6
Climate Change: Marine and Coastal Impact	6
Ecophysiology of Aquatic Organisms	6
Marine Renewable Energies	6
Prediction and Risk Models for Costal Management	6
Project Design and Evaluation in Marine Engineering and Sciences	6

Data Management: Communications, Programming and Simulation	6
Engineering of Aquaculture Projects	6
Marine Exploration, Acoustics and Sonar Systems	6
Marine Instrumentation, Robotics and Power Systems	6
Marine Platforms, Observatories and Materials Technology	6
Sustainable Aquaculture Production Technologies	6

Optational subjects or work placement	12
Bachelor's Thesis	18

Major in Marine Sciences and Engineering

Major in Marine Technologies

BACHELOR'S DEGREE IN

MARINE SCIENCES AND TECHNOLOGIES

Multidisciplinary study
of the marine environment for its coordinated management It includes sciences, engineering, biotechnology, the environment and advanced technologies in the field.

On this bachelor's degree
you will combine sciences and engineering tools to further your knowledge of marine sustainability.

Engineering that moves the world

Further information:
camins.upc.edu

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