

# Bachelor's degree in Marine Technologies

The **bachelor's degree in Marine Technologies** will give you a solid grounding in the operation, maintenance and management of power plants and ship systems, and in the design, reengineering and construction of vessels. In addition to working on board ships, graduates also have the skills needed to fill positions related to the operation of offshore platforms for oil and gas extraction, dredgers, underwater machinery, and any other industrial activity carried out in the maritime and land-based sector. You can choose between two majors:

## Major in On-Board Practicals

You will be assigned to a merchant ship as a student trainee to complete part of the work experience component required to qualify as a marine engineering officer.

## Major in Marine Electrotechnics

In this course you will develop the knowledge and skills required to work as an electro-technical officer. You will learn about electrical systems, automatic control and computer networks, radio navigation equipment, radio communication systems and other specialised topics.

## Majors

- On-Board Practicals
- Marine Electrotechnics

## GENERAL DETAILS

### Duration

4 years

### Study load

240 ECTS credits (including the bachelor's thesis). One credit is equivalent to a study load of 25-30 hours.

### Delivery

Face-to-face

### Fees and grants

Approximate fees per academic year: €1,660 (€2,490 for non-EU residents). [Consult the public fees system based on income \(grants and payment options\)](#).

### Location

[Barcelona School of Nautical Studies \(FNB\)](#)

### Official degree

[Recorded in the Ministry of Education's degree register](#)

## ADMISSION

### Places

40

### Registration and enrolment

[What are the requirements to enrol in a bachelor's degree course?](#)

### Legalisation of foreign documents

All documents issued in non-EU countries must be [legalised and bear the corresponding apostille](#).

## DOUBLE-DEGREE AGREEMENTS

### Double-degree pathways at a single school

- Bachelor's degree in Marine Technologies + bachelor's degree in Naval Systems and Technology Engineering

## PROFESSIONAL OPPORTUNITIES

### Professional opportunities

- Management and coordination of activities related to production, operation, maintenance and repair of power plants and industrial facilities.
- Technical and management positions at thermal and nuclear power plants.
- Maintenance management in maritime and industrial facilities.
- Technical and management positions with shipyards, shipbuilders and shipping companies.
- Customs supervision.
- Drafting and development of technical projects and reports.
- Inspection and certification of civilian vessels.
- Average adjustment.
- Projects related to quality, the environment, maritime safety, and occupational hazard prevention.
- Teaching.

## ORGANISATION: ACADEMIC CALENDAR AND REGULATIONS

### Academic calendar

[General academic calendar for bachelor's, master's and doctoral degrees courses](#)

### Academic regulations

[Academic regulations for bachelor's degree courses at the UPC](#)

### Language certification and credit recognition

Queries about [language courses and certification](#)

Barcelona School of Nautical Studies (FNB)

## CURRICULUM

Subjects		ECTS credits	Type
<b>FIRST SEMESTER</b>			
Fundamentals of Mathematics I		6	Compulsory
Graphic Expression		6	Compulsory
Informatics		6	Compulsory
Physics		9	Compulsory
<b>Major in Marine Electrotechnics</b>	Fundamentals of Mathematics I	6	Compulsory
	Graphic Expression	6	Compulsory
	Informatics	6	Compulsory
	Physics	9	Compulsory
<b>Major in Work Placement</b>	Fundamentals of Mathematics I	6	Compulsory
	Graphic Expression	6	Compulsory
	Informatics	6	Compulsory
	Physics	9	Compulsory

## SECOND SEMESTER

Subjects		ECTS credits	Type
Business Management and Organisation		6	Compulsory
Chemistry		6	Compulsory
Fundamentals of Mathematics II		6	Compulsory
Maritime Technical English		6	Compulsory
Mechanics and Strength of Materials		9	Compulsory
<b>Major in Marine Electrotechnics</b>	Business Management and Organisation	6	Compulsory
	Chemistry	6	Compulsory
	Fundamentals of Mathematics II	6	Compulsory
	Maritime Technical English	6	Compulsory
	Mechanics and Strength of Materials	9	Compulsory
<b>Major in Work Placement</b>	Business Management and Organisation	6	Compulsory
	Chemistry	6	Compulsory
	Fundamentals of Mathematics II	6	Compulsory
	Maritime Technical English	6	Compulsory
	Mechanics and Strength of Materials	9	Compulsory
<b>THIRD SEMESTER</b>			
Applied Thermodynamics and Thermotechnics		6	Compulsory
Construction of Recreational Craft		6	Optional
Electricity and Electrotechnics		6	Compulsory
Innovation Management		6	Optional
Inspection, Maintenance and Repair of Electric Facilities		6	Optional
Inspection, Maintenance and Repair of Marine Systems		6	Optional
Inspection, Maintenance and Repair of Ship Structures		6	Optional
Management Abilities		6	Optional
Marine Data and Information Processing Using Matlab		4.5	Optional
Maritime Medicine		3	Compulsory
Mathematical Methods for Engineering		9	Compulsory
Mechanics Technology		6	Compulsory
Production Methods with Composite Materials		6	Optional
Project Management		6	Optional
Technical Inspection of Recreational Craft		6	Optional

<b>Subjects</b>		<b>ECTS credits</b>	<b>Type</b>
<b>Major in Marine Electrotechnics</b>	Applied Thermodynamics and Thermotechnics	6	Compulsory
	Construction of Recreational Craft	6	Optional
	Electricity and Electrotechnics	6	Compulsory
	Innovation Management	6	Optional
	Inspection, Maintenance and Repair of Electric Facilities	6	Optional
	Inspection, Maintenance and Repair of Marine Systems	6	Optional
	Inspection, Maintenance and Repair of Ship Structures	6	Optional
	Management Abilities	6	Optional
	Marine Data and Information Processing Using Matlab	4.5	Optional
	Maritime Medicine	3	Compulsory
	Mathematical Methods for Engineering	9	Compulsory
	Mechanics Technology	6	Compulsory
	Production Methods with Composite Materials	6	Optional
	Project Management	6	Optional
	Technical Inspection of Recreational Craft	6	Optional
<b>Major in Work Placement</b>	Applied Thermodynamics and Thermotechnics	6	Compulsory
	Construction of Recreational Craft	6	Optional
	Electricity and Electrotechnics	6	Compulsory
	Innovation Management	6	Optional
	Inspection, Maintenance and Repair of Electric Facilities	6	Optional
	Inspection, Maintenance and Repair of Marine Systems	6	Optional
	Inspection, Maintenance and Repair of Ship Structures	6	Optional
	Management Abilities	6	Optional
	Marine Data and Information Processing Using Matlab	4.5	Optional
	Maritime Medicine	3	Compulsory
	Mathematical Methods for Engineering	9	Compulsory
	Mechanics Technology	6	Compulsory
	Production Methods with Composite Materials	6	Optional
	Project Management	6	Optional
	Technical Inspection of Recreational Craft	6	Optional
<b>FOURTH SEMESTER</b>			
Fluid Mechanics		6	Compulsory
Materials Science and Technology		6	Compulsory
Naval Construction		6	Compulsory
Naval Electronics		6	Compulsory
Ship Theory		6	Compulsory

Subjects		ECTS credits	Type
<b>Major in Marine Electrotechnics</b>	Fluid Mechanics	6	Compulsory
	Materials Science and Technology	6	Compulsory
	Naval Construction	6	Compulsory
	Naval Electronics	6	Compulsory
	Ship Theory	6	Compulsory
<b>Major in Work Placement</b>	Fluid Mechanics	6	Compulsory
	Materials Science and Technology	6	Compulsory
	Naval Construction	6	Compulsory
	Naval Electronics	6	Compulsory
	Ship Theory	6	Compulsory
<b>FIFTH SEMESTER</b>			
Automatic Regulation and Control		6	Compulsory
Marine Pollution Prevention and Sustainability		6	Compulsory
Maritime Legislation		3	Compulsory
Maritime Safety & Security		6	Compulsory
Propulsion		4.5	Compulsory
Refrigeration and Air Conditioning Facilities		4.5	Compulsory
<b>Major in Marine Electrotechnics</b>	Automatic Regulation and Control	6	Compulsory
	Marine Pollution Prevention and Sustainability	6	Compulsory
	Maritime Legislation	3	Compulsory
	Maritime Safety & Security	6	Compulsory
	Propulsion	4.5	Compulsory
	Refrigeration and Air Conditioning Facilities	4.5	Compulsory
<b>Major in Work Placement</b>	Automatic Regulation and Control	6	Compulsory
	Marine Pollution Prevention and Sustainability	6	Compulsory
	Maritime Legislation	3	Compulsory
	Maritime Safety & Security	6	Compulsory
	Propulsion	4.5	Compulsory
	Refrigeration and Air Conditioning Facilities	4.5	Compulsory
<b>SIXTH SEMESTER</b>			
Internal Combustion Engines		9	Compulsory
Marine Turbomachines and Steam Generators		9	Compulsory
Operation and Maintenance of Marine Engines and Systems		6	Compulsory
<b>Major in Marine Electrotechnics</b>	Internal Combustion Engines	9	Compulsory
	Marine Turbomachines and Steam Generators	9	Compulsory
	Operation and Maintenance of Marine Engines and Systems	6	Compulsory

Subjects		ECTS credits	Type
<b>Major in Work Placement</b>	Internal Combustion Engines	9	Compulsory
	Marine Turbomachines and Steam Generators	9	Compulsory
	Operation and Maintenance of Marine Engines and Systems	6	Compulsory
<b>SEVENTH SEMESTER</b>			
	Electric Propulsion and Power Electronics	4.5	Compulsory
	Inspection and Non-Destructive Testing	4.5	Compulsory
	Installations and Maintenance	4.5	Compulsory
	Transport of Dangerous, Hazardous and Harmful Goods	4.5	Compulsory
<b>Major in Work Placement</b>	Work Placement	30	Compulsory
	Electric Propulsion and Power Electronics	4.5	Compulsory
	Inspection and Non-Destructive Testing	4.5	Compulsory
	Installations and Maintenance	4.5	Compulsory
	Transport of Dangerous, Hazardous and Harmful Goods	4.5	Compulsory
<b>Major in Marine Electrotechnics</b>	Electric Propulsion and Power Electronics	4.5	Compulsory
	Inspection and Non-Destructive Testing	4.5	Compulsory
	Installations and Maintenance	4.5	Compulsory
	Transport of Dangerous, Hazardous and Harmful Goods	4.5	Compulsory
<b>EIGHTH SEMESTER</b>			
<b>Major in Marine Electrotechnics</b>	Automatic Control Systems and Computer Networks on Board	6	Compulsory
	Maintenance and Repair of Equipment and Electric Systems on Board	6	Compulsory
	Maintenance and Repair of Equipment and Electronic Systems	6	Compulsory
	Maintenance and Repair of Radionavigation Equipment and Radio Communication Systems	6	Compulsory
	Operation and Maintenance of High Voltage Systems	6	Compulsory
	Bachelor's Thesis	12	Project
	Bachelor's Thesis	12	Project
<b>Major in Work Placement</b>	Bachelor's Thesis	12	Project