ORGANIZING UNIVERSITIES

Unidad de Pescado
Ecole Henriot
Université de Strathclyde
University of Nantes
NTNU
Norwegian University of Science and Technology

IMPORTANT INFORMATION

- Location: UPV/EHU (Spain), Strathclyde (UK), ECN (France) and NTNU (Norway)
- Type of master: Erasmus Mundus
- Type of learning: On-Campus
- Language: English
- Calendar: 2018 - 2020 (4 semesters)
- Teaching load: 120 ECTS (90 teaching + 30 master’s thesis)
- Scholarships available (Erasmus Mundus funding)
- Supported by: + 35 entities

CONTACT AND INFORMATION

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Programme coordinator: Jesús María Blanco: jesusmaria.blanco@ehu.eus
Website: master-rem.eu

Erasmus Mundus Joint Master Degree
MASTER IN RENEWABLE ENERGY IN THE MARINE ENVIRONMENT
master-rem.eu
The Master in Renewable Energy in the Marine Environment (REnE) is an Erasmus Mundus Joint Master Degree (EMJD) offered by four universities: the University of the Basque Country, University of Strathclyde, the Norwegian University of Science and Technology and École Centrale de Nantes.

The master is co-funded by the Erasmus+ Programme of the European Union.

PRESENTATION AND GOALS

Renewable energy plays a more and more important role. At a social level, renewable energy contributes to a more sustainable energy system, by providing a more independent power system and contributing to the reduction of global warming and climate change.

Offshore renewable energy has a vast potential, but they represent a major technological challenge. The harsh conditions offshore demand advanced specific knowledge in various scientific and technological fields, and specifically trained professionals are demanded by this industry.

Module 1. Resource and marine environment
- Ocean wave energy and offshore wind energy assessment
- Water waves and sea states modelling

Module 2. Theoretical foundations: early marine energy conversion
- Inspection and survey
- Control Principles
- Advanced fluid dynamics modelling for marine engineering applications
- Theoretical and numerical aspects in fluid dynamics and turbulent flow
- Computational fluid dynamics for turbulent flow
- Modelling of wind/marine current turbine-driven electric generators
- Wave to wire control
- Applied electromagnetics in power engineering
- General concepts of hydrodynamics
- Numerical hydrodynamics
- Experimental hydrodynamics

Module 3. Conversion technologies
- Wind Energy and Distributed Energy Resources
- Renewable marine energy systems
- Power electronics in future power systems
- Wind power in electric power systems
- Marine renewable energy

Module 4. Connection and integration into the electricity and power system
- Power Electronics Devices, Drives Machines and Applications
- Integration of renewable energy into the electricity system
- Operation of transmission and distribution networks
- Power electronics in offshore power systems
- Power electronics
- Power system analysis
- Quality of supply in electrical power system

Module 5. Engineering, development and management of offshore parks
- Physical model testing for offshore renewables
- Advanced Marine Structures
- Environmental conditions for marine renewable concepts
- Operations and maintenance of marine energy arrays
- Wave-structure interactions and moorings

Module 6. Environmental, economic and legal aspects of marine renewable energy
- Energy economics
- Environmental Impact Assessment

Module 7. Local culture
- Basque language and culture
- French language and culture

APPLICATION PROCEDURE

Applicants are required to complete the online application process and forms available through the REM website. The procedure has 2 steps:
1. Completing the online application form.
2. Attaching the required documents to the application form.

The deadline for returning the application form and the required documentation will be announced on the REM website but will normally be before 15th of March every academic year.

Erasmus Mundus scholarships are open to higher education Third Country and European students and academics from all over the world.

ERASMUS MUNDUS SCHOLARSHIPS

A student may commence research for the thesis project (120 ECTS) just after successfully progressing to Semester 3. The thesis can be undertaken in one of the four organizing Universities or in one of the Associate Centres.

Masters Thesis

Students are required to undertake a research project allowing them to carry out an individual research leading to a project (30 ECTS) just after successfully progressing to Semester 3. The thesis can be undertaken in one of the four organizing Universities or in one of the Associate Centres.

Student mobility is compulsory so that each student must undertake the Programme by enrolling at three of the four partner universities (including for completion of a master thesis).

ECTS credits are assigned to Modules. Each student will be assigned to a Supervisor. An individual study plan must be then elaborated and mutually agreed between the student and his/her Supervisor.

Every academic year, the required documentation will be announced on the REM website. The procedure has 2 steps:
1. Completing the online application form.
2. Attaching the required documents to the application form.

The deadline for returning the application form and the required documentation will be announced on the REM website but will normally be before 15th March every academic year.