ORGANIZING UNIVERSITIES

CONTACT AND INFORMATION

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IMPORTANT INFORMATION

- Location: Bilbao (Spain), Cork (Ireland), Nantes (France) and Trondheim (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: + 55 entities

MASTER IN RENEWABLE ENERGY IN THE MARINE ENVIRONMENT

Erasmus Mundus Joint Master Degree
master-remplus.eu
The Master in Renewable Energy in the Marine Environment (REM PLUS) is an Erasmus Mundus Joint Master Degree (EMJD) offered by four universities: the University of the Basque Country, the University College Cork, 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.

The aim of the REM PLUS master is to form specialists with the required abilities to accomplish this technological challenge.

The Master provides the student with skills in assessment, analysis, simulation, development and exploitation of the plants in the electric system. Moreover, this programme has a network of associated centres formed by several world-renowned research institutions/companies. The programme trains the student to face the technological challenges that harsh conditions offshore require.

Likewise, students will also be able to pursue researchpositions in Universities, Research and Development in technological poles, and other institutes.

MODELS AND SUBJECTS

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

MODULE 2. Theoretical foundations: early marine energy conversion
- Environmental Hydrodynamics
- Control Engineering I
- 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 measurement control
- Applied electromagnetics in power engineering
- General concepts of hydrodynamics
- Numerical hydrodynamics
- Experimental hydrodynamics

MODULE 3. Conversion technologies
- Wind Energy Engineering
- Ocean Energy
- Power electronics in future power systems
- Wind power in electric power systems
- Marine renewable energy

MODULE 4. Connection and integration into the electricity grid
- Electrical Power Engineering I
- Integration of renewable energy into the electricity grid
- Operation of transmission and distribution networks
- Power electronics in offshore power systems
- Power electronics
- Power system analysis

MODULE 5. Engineering, development and management of offshore parks
- Hydrodynamics
- Data Analytics for Engineering
- Environmental conditions for marine renewable projects
- Operations and maintenance of marine energy arrays
- Wave-structure interactions and moorings

MODULE 6. Environmental, economic and legal aspects of marine renewable energy
- Sustainable Energy
- Civil Engineering Systems

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

APPLICATION PROCEDURE

Applicants are required to complete the online application, providing documents and forms available through the REM PLUS 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 PLUS website but will normally be before 15th of March every academic year.

ERASMUS MUNDUS SCHOLARSHIPS

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

ERASMUS MUNDUS scholarships cover tuition fees, participation costs (including insurance coverage), travel cost contribution, installation cost contribution, and monthly allowance.

PROFESSIONAL OUTCOMES

The completion of the master will prepare the student for a leadership role in various renewable energy and marine sectors. Students will be able to carry out high-level technical jobs in engineering companies, equipment manufacturers and other marine industries.

Marine and renewable energy companies and institutions increasingly demand specifically trained professionals with an advanced specific knowledge in various scientific and technological fields. Th工程项目 trains the student to face the technological challenges that harsh conditions offshore require.

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Not only they have a direct participation in the master teaching and hosting students for their master thesis but they also recognize that the learning outcomes of the REM PLUS programme are suitable for positions in their institutions/companies. The programme trains the student to face the technological challenges that harsh conditions offshore require.

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The programme is a two years masters’ course consisting of 4 semesters of study (120 ECTS), in accordance with the ECTS (European Credit Transfer System).

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.

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