Hanze

Programme

Qualification awarded
Master of Science

Length of the programme
16 months

ECTS credits
90

Level of qualification
Master

Mode
Full-time

Language
English

School
Engineering, Life Sciences & ICT

Locations
Groningen

European Master in Renewable Energy

Profile of the programme

European Master in Renewable Energy compromises 90 ECTS. The content and structure of the EUREC Master is predetermined by the EUREC university consortium and comprises:

1. a core semester of 30 ECTS;
2. a specialisation semester at Hanze UAS or a partner university of 30 ECTS; and
3. a thesis project of 30 ECTS

The programme offers the following specialisations:

- Photovoltaics (taught at the University of Northumbria, UK)
- Wind Energy (taught at the National Technical University of Athens, Greece)
- Solar Thermal Energy (taught at the University of Perpignan, France)
- Grid Integration (taught at the University of Zaragoza, Spain)
- Ocean Energy (taught at the Instituto Superior Tecnico, Portugal)
- Sustainable Fuel Systems for Mobility (taught at Hanze UAS, Netherlands)

Learning outcomes

The student has the ability to:

- carry out tasks in a project environment
- participate effectively in an international multidisciplinary team
- communicate effectively orally, visually, written at an appropriate level (english) to clients and stakeholders
- communicate the link between technological projects and strategic objectives to the management and other stakeholders
- staying abreast of relevant (inter) national developments, trends, ideas in society, policy and professional practice, translating, developing and introducing these in an innovative manner to improve professional practice
- manage his/her own learning process and sharing expertise with peers and other experts in professional practice
- formulate a problem definition, employ specific research and analysis methods to collect relevant data, conduct research on real-life non routine problem
- translate a practical problem into questions forming a conceptual problem, collect relevant data, translate outcomes of the model into answers to the original problem
- apply appropriate scientific methods and techniques, mathematics, economics and other sciences in energy system design
- communicate scientific findings in both written and oral form in English to the problem owner and other relevant stakeholders
- display a reflective attitude towards the possibilities and limitations of the scientific method used, contribute to the development of the body of knowledge, make meaningful contributions to the energy debate.
- apply knowledge and insights of the principles of a range of renewable energy systems for optimal energy conversion
- design a range of renewable energy systems for optimal energy conversion at a given location and for particular applications
- critically appraise codes of practice and regulatory frameworks relevant to renewable energy systems
- analyse economic and planning aspects of renewable energy systems as well as technological considerations
- statistically assess renewable energy sources at a specific location given appropriate data
- multiple renewable energy technologies and – depending on the specialisation chosen by the student – specialist in at least one renewable energy technology.
- integrating renewable energy sources (wind, solar [photovoltaic, thermal], water, biomass energy) into a flexible, distributed energy system.
- applying the principles of integrated storage techniques.
- analysing and improving the energy efficiency of production chains (implementing innovations).

Programme

European Master in Renewable Energy	**credits**
Core Semester	30
▯ RWVM26ETF - Energy Technical Foundation	*5*
▯ RWVM23ETP - Research Skills	*5*
▯ RWVM23BME - BioMass Energy	*5*
▯ RWVM23WHE - Wind and Marine Energy	*5*

- RWVM26SLE - Solar Energy *5*
- RWVM23ETDS - Energy Transport, Distribution & Storage *5*

Specialisation Semester 30

one of following courses

- Specialisation Grid Integration (Zaragoza) *30*
  - RWVM23SGI - Specialisation Grid Integration (Zaragoza) *30*
- Specialisation Wind Energy (Athens) *30*
  - RWVM23WE - Specialisation Wind Energy (Athens) *30*
- Specialisation Photovoltaics (Northumbria) *30*
  - RWVM23SPV - Specialisation Photovoltaics (Cyprus) *30*
- Specialisation Solar Thermal (Perpignan) *30*
  - RWVM23SST - Specialisation Solar Thermal (Perpignan) *30*
- Specialisation Ocean Energy (Lisbon) *30*
  - RWVM23SOE - Specialisation Ocean Energy (Lisbon) *30*
- Specialisation Sustainable Energy and the Digital Transformation (Kortrijk) *30*
  - SUVM23SEDT - Specialisation Sustainable Energy and the Digital Transformation (Kortrijk) *30*
- Specialisation Sustainable Fuel Systems *30*
  - RWVM23PAF - Physics and Fuels *5*
  - RWVM23BEC - Bio Energy Conversion *10*
  - RWVM23P2U - Power2Hydrogen *5*
  - RWVM23SFSD - Sustainable Fuel Systems Design *5*
  - RWVM23NBD - New Business Development *5*

Thesis Semester 30

- RWVM23THP - Thesis Research Project *30*

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