Course: Wind and Marine Energy — credits: 5

Course code	RWVM23WHE
Name	Wind and Marine Energy
Study year	2026-2027
ECTS credits	5
Language	English
Coordinator	N.C. Adema
Modes of delivery	Education
Assessments	Assignment WHE - Presentation Lab WHE - Assignment Theory - Written, organised by STAD examinations

Learning outcomes

After completion of the module the student is able to:

- Perform a resource assessment on basis of wind speed measurements (Application)
- Analyse and Interpret wind turbine performance measurements (Evaluation)
- Develop a mathematical/physical model to optimize a wind turbine design in terms of energy production, loads and costs (Application)
- Determine and examine acoustic noise levels on a wind turbine (Analysis)
- Assess in a qualitative. and where, possible quantitative way measurement and calculation errors with uncertainties (Evaluation)
- To understand the-state-of-the-art of marine energy and investigate the future potential of marine energy (Analysis)
- Report and present in group form, the results of experiments and analyses in a scientifically correct way

Content

Content of the module:

In terms of scientific and technical contents this module will treat the following aspects of wind energy:

- Introduction into wind energy
- The wind energy sector in a bird view: history, markets, scenario's and roadmaps,
  - Technological challenges and concepts
  - Off-shore wind energy versus on-shore wind energy
- Wind climate and resource assessment (measurements and modelling)
- Rotor design (aerodynamics, aero-elasticity, acoustics, costs)
- Introduction into Marine energy

Included in programme(s)

European Master in Renewable Energy

School(s)

Engineering, Life Sciences & ICT

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