

## Vak: Wind and Marine Energy

credits: 5

**Vakcode** ZVWH17WHE  
**Naam** Wind and Marine Energy  
**Studiejaar** 2021-2022  
**ECTS credits** 5  
**Taal** Engels  
**Coördinator** W.F.J. Swart Ranshuysen

**Werkvormen** Practicum / Training  
Werkcollege  
**Toetsen** Assignment WHE - Overige toetsing  
Lab WHE - Overige toetsing  
Theory - Computer, organisatie  
ToetsCentrum

### Leeruitkomsten

After successful completion of this module, the student is able to:

- Perform a resource assessment on basis of wind speed measurements
- Interpret and analyze wind turbine performance measurements
- Make motivated wind turbine design choices
- Develop a mathematical/physical model to optimize a wind turbine design in terms of energy production, loads and costs
- Determine acoustic noise levels on a wind turbine
- Keep an orderly lab notebook according to the lab notebook guidelines
- Make a quantitative assessment of measurement and calculation errors and uncertainties
- Understand the-state-of-the-art and the potential of marine energy
- Report (in written form) the results of the experiments and analyses in a scientifically correct and clear form

### Inhoud

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

**Opgenomen in opleiding(en)**  
European Master in Renewable Energy

**School(s)**  
Instituut voor Engineering

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