

POST-ACADEMIC COURSE

# OFFSHORE WIND ENERGY

Advanced track: Technological aspects

15 JANUARY 2025 – 23 APRIL 2025



GHENT  
UNIVERSITY

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Offshore wind has a vital role to play in the global transition to green energy. As a rapidly growing energy technology, offshore wind has huge potential around the world. In the Belgian North Sea, offshore wind farms generate about 10% of Belgium's total electricity demand. By 2030, offshore wind capacity in the North Sea will continue to grow, generating about 30% of electricity demand of Belgium.

For this booming industrial sector, Ghent University provides three tracks of lifelong learning courses for those who want to expand their knowledge of all phases of offshore wind energy, with a mix of academic and industrial speakers:

- 🔗 Foundational track
- 🔗 Advanced track of technological aspects
- 🔗 Regulatory and economic track

## TARGET AUDIENCE

This course is targeted towards people working in (or with the ambition to be working in) or researching the offshore wind, power or maritime sector. A bachelor level (or equivalent through minimal 2 year relevant working experience) is obligatory. A certain technical background is assumed from the participants.

## SCIENTIFIC COORDINATION

Prof. Lieven Vandevelde, Department of Electromechanical, Systems and Metal Engineering, Ghent University

## TEACHERS

The complete list of teachers can be found on the website

## PROGRAMME

### Module 1 : From wind to wire: electricity

This module describes the wind power production and conversions up to the grid connection and integration, i.e. "from wind to wire". Herein the components (turbine blades, generators, offshore grid, etc.) are discussed in detail.

### Module 2: Structural aspects

This module focuses on structural aspects and offshore foundations in particular, e.g. wave-structure interactions, geotechnical and material aspects, floating structures, etc.

The last lesson of this module will take place at Smulders (Arendonk) where also a visit will be organised.

### Module 3: Operational excellence

This module focusses on the operational aspects of offshore wind farms, viz monitoring of various assets and parameters, maintenance, wind power prediction, etc..

The last lesson of this module will be organised at Ostend Science Park where a visit at the Coastal & Ocean Basin (COB) and The Reef will be organised.

## PRACTICAL

Fee: MOD1 -> 1.080 euro - MOD2 -> 820 euro - MOD3 -> 765 euro - Complete course -> 2.400 euro

Dates: 15 January 2025 – 23 April 2025

Location: Ghent University, UGain classroom, building 60, Technologiepark Zwijnaarde.