Wind Energy

Are you interested in sustainable energy, and in particular wind energy? Would you like to work on interesting projects with other students from various engineering disciplines? Would you like to learn everything about on- and offshore wind energy and join national and international excursions to small and large wind turbine manufacturers? This is your chance!

During this programme, you will deal with various themes that play a role in the offshore and onshore wind industry. For example; the design, construction, operation and maintenance of relatively small to very large wind turbines. You will learn about wind turbines with a horizontal and vertical axis, about the challenges surrounding electricity networks and how to deal with the varying energy yield of wind energy. We'll also take a side trip into hydrogen technology and look at how you can use hydrogen as a buffer alongside wind energy.

We introduce you to theory about turbine blade aerodynamics, the conversion to electricity, but also the challenges this poses to the electricity network. We will also bring you into contact with various large and small companies in the rapidly changing market in offshore and onshore wind energy. We are looking for ambitious students who want to roll up their sleevesand learn about renewable energy and wind turbines.

The Wind Energy programme has been developed in cooperation with EnTranCe, companies, and knowledge and research institutions. The programme is currently divided into 4 modules:

- ***Introduction Wind Energy.*** The principles of wind energy are dealt with in class. We will also work with various calculation tools (Solid Works, calculation models in Excel, etc.). During a practical session our small wind tunnel is used.

- ***Maintenance, Management, and Safety*.** In this module we go on an excursion to Denmark. We stay for a week at the Folkecenter. In this module we look at what safety aspects apply, for example, when installing and maintaining wind turbines, when performing work in workshops, and when using hydrogen. All participating students need to obtain their internationally recognized industrial safety certificate (VCA / SCC).

- ***Design and Realization***. Composites are an important component in the construction of wind turbine blades. This module is dedicated to the theory of composites and the testing of different homemade composite materials.

- ***Development, Implementation and Professionalisation.*** In this module you will work with a group of students on one or more projects. We have projects with partners from the wind turbine market, but students can also propose their own projects. In addition, this module includes the micro-wind turbine challenge, in which students build their own micro-wind turbine that is tested in our small wind tunnel. We will also go on an excursion to one of the small wind turbine manufacturers near the city of Groningen.

Course Outline

The course outline of this programme is not yet available in our ECTS course catalogue. For more information, please contact the course coordinator Arjen de Ruijter (a.de.ruijter@pl.hanze.nl)

Language

English

Location

Groningen. The main locations are EnTranCe (Zernike Campus) and Hanze University of Applied Sciences.

Duration

One semester (30 ECTS credits).
Students who apply for this programme are expected to do the whole programme of 30 ECTS credits.

Course period

Autumn semester (September - February)

Tuition Fees

Exchange students
Exchange students (students from partner universities) don't need to pay tuition fees.

Certificate students
Costs for certificate students (students not from partner universities) can be found under hanze.nl/tuitionfees

Admission requirements

The programme is offered in the third year of a (4-year) bachelor programme. Students need to have completed 120 ECTS credits (4 semesters) at undergraduate level in the field of Engineering, Built Environment or Applied Sciences.

Language requirements
Exchange students need to have a good level of English, comparable to IELTS 6.0, TOEFL 550 or CEFRL B2.

Certificate students need to give proof of English proficiency: IELTS 6.0 or TOEFL 550.

Application (deadline)

Application deadline
1 June (Autumn Semester)
Students from Bangladesh, Pakistan and Nepal need to apply before 1 May

For more information regarding practical matters (application, housing, tuition fees), you can contact the International Service Desk.

Notes

Costs of excursions: € 50
Additional costs may apply if the SCC exam is passed.

The schedule for this programme may vary from week to week. The programme is intensive and students who apply for this programme are expected to be available and present for the whole duration of the programme.