

Offshore Wind Project Development

Applied graduate studies



Language:
English

Duration:
16 months



IFP School's Master's degree/ Specialized engineering degree (Diplôme d'ingénieur spécialisé)

The urgency of environmental concerns and the inescapable challenges of energy transition and global warming are driving the energy industry to intensify the use of alternative energies with low CO₂ emissions. At the same time, the demand for energy continues to grow to support the development of many countries.

Among renewable energies, wind power is playing an increasingly important role, particularly offshore wind power, as Europe boasts a long coastline and a well-developed continental shelf, in areas where wind resources are significant. Recent studies have underlined the need for talented engineers ready to tackle the many challenges (technical, economical, societal) of the emerging offshore wind industry to help the development of such projects.

The program aims equipping you with the necessary tools and knowledge to cover the entire chain of values of an offshore wind project, both bottom-fixed and floating system technologies, including methodologies and numerical tools to assess the wind resource, evaluate and monitor the environmental impact, select turbines, design the architecture of the farm including electrical architecture, foundations, and

mooring systems, monitor the offshore farm all along its life to ensure its profitability. You will learn how to integrate HSE into all engineering, construction, operations, and facility management work.

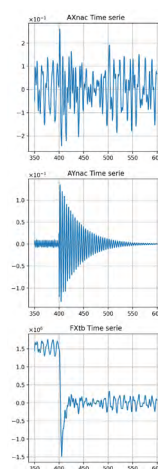
The program will also equip you with knowledge about regulations, state policies, societal understanding, and economics context. These skills will be particularly developed during the project you will be working on, based on real case data that you will integrate to propose an offshore wind farm development.

In addition to the specific technical aspects of these fields, the program covers more generally the methodology and economics, environmental, cultural, and human aspects that are useful to any engineer in the corporate environment.

You will benefit from IFPEN's rich environment, with lectures and practical work given by its researchers developing innovative approaches, particularly in the fields of numerical modeling for yield assessment and offshore substructures, and from IFPEN wide range of industrial partners who will share with you their expertise.



Interested in renewable energies? Passionate about engineering sciences and offshore activities? Our program will equip you with the necessary skills to become a key player in the booming industry of offshore wind farms. You'll discover the technical and human challenges involved. You'll learn how to tackle giant, highly complex industrial projects that depend on a natural resource that's tricky to model, while preserving the environment and contributing to regional economic development. Our program is a unique journey through the entire chain of values of offshore wind activities. Let's open together the doors for numerous exciting positions in the wind industry! Join us today!



CAREER OPPORTUNITIES

Wide panel of opportunities, particularly in France and Europe:

- Offshore wind farm design engineer
- Offshore wind farm project manager
- Offshore wind farm operations engineer
- Offshore wind farm production supervisor
- Floating structures design engineering manager



Find out more: www.ifp-school.com

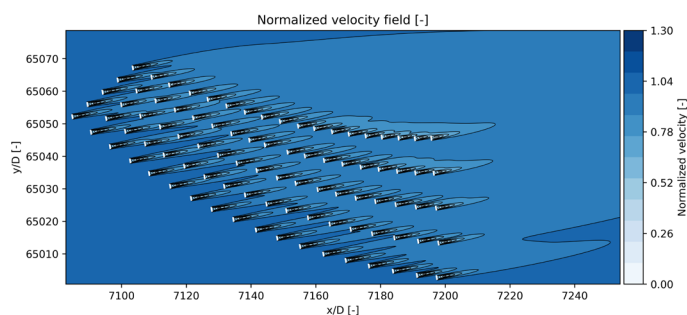


- Comprehensive and integrated view of all the components involved in developing an offshore wind farm
- Strong mix between concepts and practical work to support an active learning process
- Lectures by the best professional specialists
- 7 weeks of multidisciplinary teamwork fully dedicated to an integrated project for the development of an offshore wind farm, based on real data provided by the industry
- Various site visits

Typical class profile/main partners

Students in this program are almost all supported by companies (through a scholarship or an apprenticeship contract...) that finance their living expenses during the academic period and contribute towards their tuition.

Partner companies include national and international renewable energy companies, offshore wind farm developers and producers, engineering and service companies of the offshore sector, operations and maintenance companies, equipment manufacturers (OEMs).



Program content

The program covers 4 main domains, the concepts and methodologies taught being later applied to a final technical and economic development project, followed by a professional integration period within a company (4 to 6 months).

<ul style="list-style-type: none"> • Environmental conditions • Environmental impacts and societal acceptance • Economics & Regulatory framework 	<ul style="list-style-type: none"> • Installation and commissioning • Operation and maintenance
<ul style="list-style-type: none"> • Wind turbines • Offshore substructures for bottom-fixed and floating systems • Offshore wind farm layout and yield assessment • Electrical engineering 	<ul style="list-style-type: none"> • Integrated project for offshore wind farm development • Site visits
	<ul style="list-style-type: none"> • Professional integration period

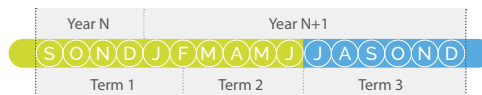


Program schedule

The two examples of schedules shown below correspond to the most frequently encountered cases for students in this program: a 16-month continuous program for students with a 4- or 5-year degree, and an alternating school/company 16-month program.

16 months

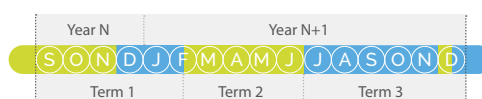
Continuous program



- IFP School
- Company

16 months

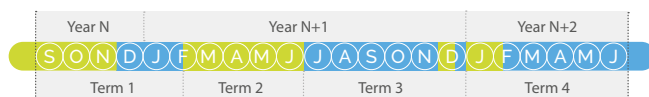
Alternating school/company program



Another possible case for the students in their penultimate year of a European school or university having signed a double-degree with IFP School:

22 months

Double-degree



Find out more: www.ifp-school.com



CERTIFIED

