POSTGRADUATE CERTIFICATE IN METOCEAN FOR OFFSHORE WIND

Overview

Status: Active
National Framework Of Qualifications (NFQ) Level: 9
NFQ Award Class: Minor Award
Duration Part Time: 1 Calendar Year(s)
Total Credits: 30
Delivery Method: Blended

Connected Curriculum:

- Employability
- Inter-and Transdisciplinary
- Sustainability

Sustainable Development Goals (SDGs):

- Affordable and Clean Energy
- Life Below Water
- Climate Action

Graduate Attributes:

- Creator, evaluator and communicator of knowledge
- Digitally Fluent
- Effective global citizen
- Independent and creative thinker
- Socially Responsible

Work-Integrated Learning (Including Placement):
No

Postgraduate Certificate in MetOcean for Offshore Wind Programme Curriculum

The *Postgraduate Certificate in MetOcean for Offshore Wind* is a strategically designed programme aimed at addressing Ireland's critical skills shortage in the rapidly expanding offshore wind energy sector. This specialised curriculum provides a rigorous academic and practical foundation for professionals seeking to contribute to the sustainable development of offshore wind infrastructure. It combines scientific, technical, and regulatory knowledge with industry-aligned competencies to prepare graduates for immediate impact in the field.

Core Curriculum Components:

- Foundations of Offshore Wind Development in Ireland
  Students gain a comprehensive understanding of the principles underpinning offshore wind energy development, with a focus on the Irish context. This includes exploration of site selection criteria, environmental and logistical challenges, project timelines, and the evolving legislative and policy landscape that governs offshore renewable energy.
- Advanced MetOcean Characterisation Techniques
  The programme delivers in-depth theoretical and applied training in meteorological and oceanographic (MetOcean) data acquisition, analysis, and interpretation. Emphasis is placed on understanding wind, wave, and current dynamics, and their implications for offshore wind farm design, operation, and maintenance.
- Marine and Coastal Governance Frameworks
  Students are introduced to the complex regulatory and governance structures that influence offshore wind development in Ireland. This includes marine spatial planning, environmental impact assessment procedures, licensing processes, and stakeholder engagement strategies.
- Project Management for Offshore Wind
  The curriculum integrates project management principles tailored to the offshore wind sector. Topics include risk assessment, budgeting, scheduling, stakeholder coordination, and the application of project lifecycle methodologies specific to large-scale marine infrastructure projects.
- Marine Geospatial Data and Mapping Skills
  Learners develop proficiency in handling marine geospatial datasets using industry-standard tools and software. Skills include spatial analysis, map creation, and data visualisation techniques essential for site assessment, reporting, and regulatory submissions.

Industry Collaboration and Relevance:

This programme has been developed in close collaboration with leading industry stakeholders, including Wind Energy Ireland and Greentech Skillsnet, ensuring that the curriculum is aligned with current and emerging needs in the offshore wind sector. The course content reflects real-world challenges and integrates case studies, guest lectures, and applied projects to bridge the gap between academic learning and professional practice.

Graduates of this programme will be equipped with the interdisciplinary expertise required to support Ireland's offshore wind ambitions and contribute meaningfully to the global transition to renewable energy.

Programme Requirements

For information about modules, module choice, options and credit weightings, please go to Programme Requirements (p. 1).

Code	Title	Credits
Students take **30** credits as follows:		
GG6501	Introduction to Geographical Information Systems	5
GG6539	Introduction to Coastal and Marine Governance	5
GG6580	Introduction to MetOcean for Offshore Wind	5
GG6581	MetOcean programming and data analysis	5
GG6582	Project Management for Offshore projects	5
NE6010	Offshore Wind Energy	5
Total Credits		**30**

Examinations

Full details and regulations governing Examinations for each programme will be contained in the *Marks and Standards Book* and for each module in the *Book of Modules*.

Programme Learning Outcomes for the Postgraduate Certificate in MetOcean for Offshore Wind (NFQ Level 9, Minor Award)

On successful completion of this programme, students should be able to:

- Critically analyse the meteorological and oceanographic characteristics of offshore wind sites
- Apply Geographic Information Systems (GIS) and geospatial analysis techniques to effectively process, visualise, and analyse data relevant to offshore wind project development
- Evaluate the legislative, governance, and policy frameworks governing national and international offshore areas including coastal zone management
- Develop comprehensive project management methods for offshore projects, that span technical, environmental, and economic considerations to effectively plan, execute, and monitor complex renewable energy intervention
- Demonstrate proficiency in MetOcean data acquisition, processing, and analysis techniques, utilizing contemporary programming tools and methodologies to characterise and assess potential offshore wind development sites
- Understand and analyse the current state of play of offshore wind development in Ireland