

# Graduate Programs in Offshore Wind Energy Engineering



Students work with Tufts faculty, industry representatives, and government officials to develop research and scholarship that make an impact on the evolving energy transition.

**The Doctor of Philosophy in Offshore Wind Energy Engineering program** is a thriving community of researchers who are engaged with collaborators world-wide. Grounded in engineering, policy, and economics, Tufts PhD students are helping to create the trans-disciplinary language that will enable us to deliver the energy transition.

**The Master of Science program** offers graduate-level education in engineering, policy, and project management. Each cohort is carefully selected to comprise a diverse team of young professionals who bring complementary perspectives from a variety of engineering and scientific disciplines.

**The Post-Baccalaureate program** offers a pathway into graduate education in engineering. Post-bac students bring backgrounds in finance, social science, and the humanities, creating a level of intellectual engagement that is uniquely responsive to complex, real-world challenges.

## Requirements:

Aim your mobile camera at QR Code for more info.

Or visit: [bit.ly/3oMdAGP](https://bit.ly/3oMdAGP)





# Research Areas

## Infrastructure

Innovation in the structural design and installation logistics of fixed and floating offshore wind turbines is critical to the future of our energy infrastructure. After completing a Tufts MS, PhD, or post-baccalaureate in offshore wind energy engineering, graduates will be able to:

- Compare European and U.S. experiences
- Understand corrosion and fatigue and examine uncertainties
- Compare standards and best practices
- Support structure design for U.S. supply chain and environmental standards
- Create advanced digital twins
- Conceive creative structural designs

**A full-time MS degree can be completed in 1.5 years with or without a thesis.**

## Supply Chain

Offshore wind job growth offers numerous opportunities for a just and equitable transition of our energy sources from fossil fuels to renewable energy like offshore wind power. At the core of this transition is a collaborative relationship between public and private investment and the prevention of market failures. Tufts faculty engineered the first offshore wind construction port in North America and have remained at the cutting edge of U.S. supply chain development. Tufts courses on supply chain draw on the fields of engineering, policy, economics, and business to assess:

- Offshore wind port infrastructure and requirements
- U.S. market capacity
- Installation vessel databases
- Turbine counts and capacities
- Jones Act overview
- Case studies and scenario development

**Part-time students can earn a degree in two to four years.**

## Transmission

The energy transition hinges on our electric grid. By 2050 we must transition a majority of our energy consumption to electricity and more than double our generation and transmission capacity. Offshore wind transmission is essential to establishing a U.S. macro grid that can deliver reliable power from variable energy resources. Students studying offshore wind energy engineering at Tufts can expect to learn about these topics and more:

- Offshore transmission grids
- Points of interconnection
- Macro- and micro-grid design
- Multi-terminal HVDC technology
- Transmission expansion planning
- Wholesale electricity market design
- Policies for regional governance

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