

# **All-Island Master's in Marine Renewable Energy**

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# Course overview

- 12-month, full-time, taught Master's in Engineering Science
  - First entry: September 2013
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- September-April: taught courses (66%)
    - Dedicated new courses in ocean energy topics
    - Advanced topics in civil, electrical, mechanical engineering
    - Transferable skills: innovation, finance, research skills
    - 'Blended learning' approach
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- June-September: industry or research lab hosted project (33%)
    - Students placed with an industry partner
    - Will carry out industrially-relevant research and/or development
    - Supervision by industry
    - Final assessment by academic supervisor

# Course partners

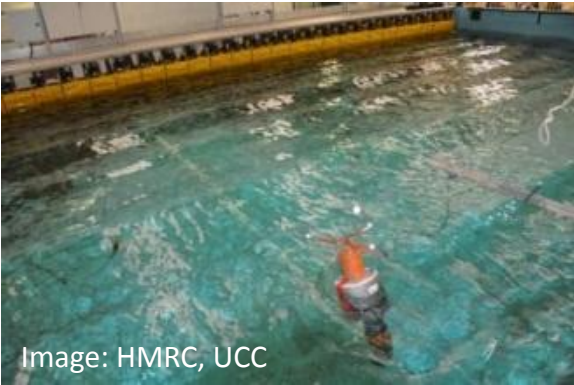


Image: HMRC, UCC



Image: Nicholson, [www.ewea.org](http://www.ewea.org)

- All-island involvement:
  - University College Cork
  - University College Dublin
  - National University of Ireland, Maynooth
  - National University of Ireland, Galway
    - With support from ICHEC
  - University of Limerick
  - Cork Institute of Technology
  - Dublin Institute of Technology
  - Queen's University, Belfast
  - Supported by the Marine Renewables Industry Association

# Taught module topics

- Essential engineering topics
  - Power systems; control engineering; environmental hydrodynamics; maintenance & reliability; introductory ocean energy
- Advanced topics in marine renewable energy
  - Marine operations & robotics; tidal energy; ICT for marine renewables; ocean energy conversion & mechanical engineering; grid integration & storage of marine energy; offshore geological exploration; economics of marine renewable energy
- Generic skills
  - Innovation finance; technology business planning; environmental impacts; research skills



# The story so far

- 2012/2013
  - Course structure identified by partners with MRIA support
- March 2013:
  - Awarded UCC e-learning development funding
- June 2013:
  - Success in Higher Education Authority Springboard programme
- Integration with SFI-funded structured PhDs (MaReI project; 2013-)
- September 2013:
  - First intake
- November 2013:
  - Success in FP7 MARINE T training programme
- June 2014
  - First industry placements

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AN tÚDARÁS um ARD-OIDEACHAS

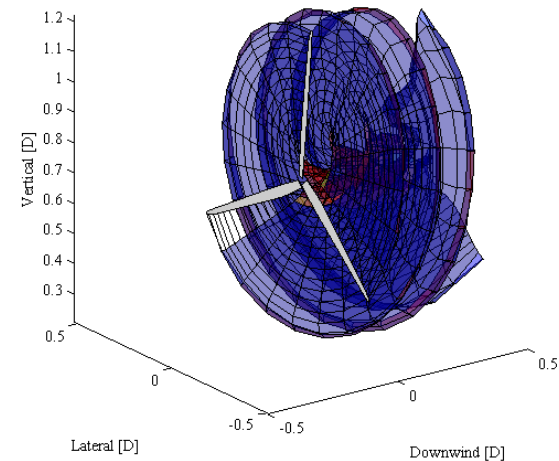


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# Call for industry projects

- A key aspect of the course is the industry-focussed project
- Students will develop a project topic in collaboration with industry partner, and:
- Spend three months on placement with the industry partner carrying out the project to completion
- June-August 2014



# Industry placements

## Benefits to student

- Real experience of working in marine renewables industry
- Networking opportunity
- Application of knowledge gained in taught programme

## Benefits to host

- Access to expertise from third-level supervisor
- Capacity to pursue R&D topic
- Future recruitment pipeline: “try before you buy”
- Potential for funding further collaborations (Horizon 2020; EI Innovation Partnerships etc.)

# Skill Sets

- Diverse Experience
  - Offshore Wind
  - Tidal Energy Device Design
  - Ocean Science Services
  - Water Resources
  - Reliability Engineering
  - WAMIT Wave modelling
  - Computer programming
  - Mechanical CAD
  - Manufacturing Engineering
  - Computational Fluid Dynamics
  - Project Management



MEngSc Class at HMRC/Beaufort Wave  
Test Tank, October 2013



# For further details

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2014 applications:

[www.pac.ie](http://www.pac.ie) (now open)

[www.marine-renewables-masters.net](http://www.marine-renewables-masters.net)

