

# **University of Plymouth**

Faculty of Science and Engineering

School of Engineering, Computing and Mathematics

## **Programme Specification**

MSc Offshore Renewable Energy (ORE) [7040]

September 2022

## 1. **MSc Offshore Renewable Energy**

**Final award title:** Master of Science in Offshore Renewable Energy, on completion of 180 credits

**Intermediate award title(s):**

Post Graduate Certificate on completion of 60 credits

Post Graduate Diploma on completion of 120 credits

**UCAS code:** N/A

**HECOS code** 100421 50%; 100175 50%

2. **Awarding Institution:** University of Plymouth

**Teaching institution(s):** University of Plymouth

## 3. **Accrediting body(ies)**

Joint Board of Moderators (JBM)

<http://www.jbm.org.uk/>

for:

The Institution of Structural Engineers (IStructE)

Institute of Highway Engineers (IHE)

The Chartered Institution of Highways and Transportation (CIHT)

Institution of Civil Engineers (ICE)

Date of re-accreditation: re-accreditation required because of changes from previous programme but not yet in place.

#### **4. Distinctive Features of the Programme and the Student Experience**

.The programme has the following unique selling points:

- derives from the first multidisciplinary Offshore Renewable Energy Masters degrees in the world. A well established, sector leading provision with strong international recruitment and a track record of excellent employment outcomes for graduates.
- a broadening MSc programme which is fully cross-disciplinary comprising expertise from engineering, marine science, economics, law and policy in order to provide students with a whole systems vision of the discipline
- aligned to the pressing need for highly-skilled individuals to develop ORE internationally as well as maintain the UK's leading role in the development and implementation of ORE
- Benefits from University and government aspirations to develop the southwest as a centre for ORE and as embodied by Supergen and PRIMaRE.
- will capitalise on existing and planned MRE facilities in the University and the South West: e.g. the COaST laboratories, the Marine Station, Wavehub; the research vessel RV Falcon Spirit; the High Performance Computing (HPC) cluster
- will capitalise on ongoing and proposed University of Plymouth research as funded by RCUK, Interreg, Horizon2020 and other funding streams (eg. Supergen, FLOWBEC, QBEX, Marinet, Ofelia, SOWFIA, SQUID, XMED, MERiFIC, Atlantic Cloud)

#### **5. Relevant QAA Subject Benchmark Group(s)**

There is no Masters-level marine benchmark group, the closest subject area that has one being Chemistry:

[https://www.qaa.ac.uk/docs/qaa/subject-benchmark-statements/subject-benchmark-statement-chemistry.pdf?sfvrsn=1af2c881\\_4](https://www.qaa.ac.uk/docs/qaa/subject-benchmark-statements/subject-benchmark-statement-chemistry.pdf?sfvrsn=1af2c881_4)

For the marine undergraduate programmes the relevant benchmark group is 'Earth Sciences, Environmental Sciences and Environmental Studies' and we interpret here with the SEEC level 7 descriptors (p12):

<https://www.seec.org.uk/wp-content/uploads/2016/07/SEEC-descriptors-2016.pdf>

And the Masters' descriptor of the QAA 'Masters' Degree Characteristics' document (p4): [https://www.qaa.ac.uk/docs/qaa/quality-code/master's-degree-characteristics-statement8019abbe03dc611ba4caff140043ed24.pdf?sfvrsn=86c5ca81\\_12](https://www.qaa.ac.uk/docs/qaa/quality-code/master's-degree-characteristics-statement8019abbe03dc611ba4caff140043ed24.pdf?sfvrsn=86c5ca81_12)

## 6. Programme Structure

The first semester of the MSc is 100% coursework assessed and the second semester modules either 100% coursework assessment or 50/50 exam coursework split. The modules employing the latter strategy do so largely to satisfy accreditation requirements.

Semester 1: 3 x 20 credit core modules

Semester 2: 3 x 20 credit option modules from a choice of 5

Summer: 60-credit dissertation

TIMING	MODULES			
<b>Semester 1</b> <b>15 weeks</b> <b>(Including 12 weeks of taught material before Christmas and a 3 week block on project work after Christmas)</b>	<b>MAR 513Z</b> Research Skills and Methods (15 weeks) Core 20 credits	<b>MAR 534</b> Introduction to Offshore Renewable Energy (12 Weeks) Core 20 credits	<b>MAR 535</b> Economics, Law and Policy for Offshore Renewable Energy (12 Weeks) Core 20 credits	<b>PROJ517</b> MSc Dissertation (All Year) Core 60 credits
<b>Semester 2</b> <b>12 weeks taught</b> <b>3 weeks on research project</b>	Option Module (12 Weeks) 20 credits	Option Module (12 Weeks) 20 credits	Option Module (12 Weeks) 20 credits	
	<b>MSc 180 credits</b>			

### Semester 2 Option modules – choice of 3 from 5

1. MAR530 Managing Marine Ecosystems
2. MAR536 Mechanics of ORE Structures
3. MAR507 Economics of the Marine Environment
4. MAR519 Modelling Marine Processes
5. MAR518 Remote Sensing & GIS

### Engineering Accreditation:

Students with an undergraduate engineering degree may use the programme for further learning requirements for obtaining chartered engineer status. As the programme has been accredited by the JBM, the Engineering Council have agreed that it may serve as further learning for all engineering institutions.

## **7. Programme Aims**

The overarching aim of this programme is to produce masters-level students with the knowledge and skills required to pursue a professional career or to carry out further research in the Offshore Renewable Energy sector.

Specifically, the programme is intended to:

**A1** Develop an understanding and awareness of the political framework, policy, planning, technological and scientific issues surrounding and at the limits of knowledge of the Offshore Renewable Energy sector.

**A2** Stimulate the acquisition of the conceptual abilities to contribute to the development and critical evaluation of specific Offshore Renewable Energy technologies.

**A3** Provide postgraduates with the skills necessary to assess the environmental impact of Offshore Renewable Technologies and to manage the associated planning requirements.

**A4** Develop the employability skills of direct relevance to the ORE industries and research organisations also comprising a commitment to their continuing professional development.

**A5** Produce alumni with the necessary high level skill set to pursue further academic research or scholarship in Offshore Renewable Energy.

## **8. Programme Intended Learning Outcomes**

### **8.1. Knowledge and understanding**

On successful completion graduates should have developed:

1. A systematic understanding of knowledge and a critical awareness of current problems and new insights at the limits of knowledge in renewable and offshore renewable energy [A1, A2, A3];
2. A comprehensive understanding of either design methodologies and/or observation [A2, A3, A4].

### **8.2. Cognitive and intellectual skills**

On successful completion graduates should be able to:

1. Evaluate critically current research and advanced scholarship in ORE [A2, A5];
2. Evaluate methodologies and develop critiques of them [A3, A4];
3. Propose new hypotheses [A2, A5];
4. Demonstrate originality in their application of knowledge [A2, A4];
5. Demonstrate a practical understanding of how established techniques of research are used to create and interpret knowledge [A1, A2, A3].

### **8.3. Key and transferable skills**

On successful completion graduates should have developed the ability to:

1. Deal with complex issues both systematically and creatively [A2, A5];
2. Make sound judgements in the absence of complete data [A1, A3];
3. Communicate their conclusions clearly to specialist and non-specialist audiences [A3, A4].

### **8.4. Employment related skills**

On successful completion graduates should be able to:

1. Exercise initiative and personal responsibility [A1, A4];
2. Make decisions in, and manage, complex and unpredictable situations [A3, A4, A5];
3. Learn independently, to the level required for continuing professional development [A1, A2, A5];
4. Continue to advance their knowledge and understanding, and to develop new skills to a high level within the ORE context [A1, A2, A5]

### **8.5. Practical skills**

On successful completion graduates should have developed:

1. Capacity for self-direction and originality in tackling and solving problems [A2, A4];
2. Ability to act autonomously and in teams in planning and implementing tasks at a professional or equivalent level [A3, A4].

## **9. Admissions Criteria, including APCL, APEL and Disability Service arrangements**

This programme primarily aims to recruit science and engineering graduates, although applications will be considered from well-qualified graduates in other disciplines with relevant experience.

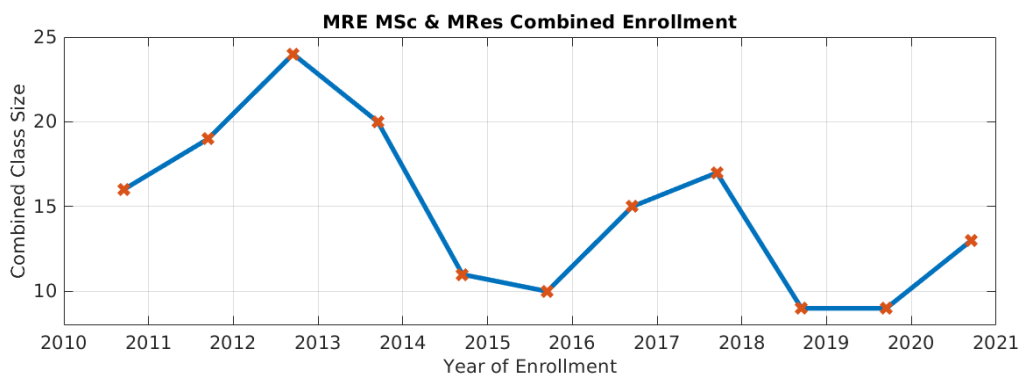
Application will be through the usual system for application to Masters degrees within the University. Candidates require an appropriate background in science or engineering to honours degree level (normally 2:2 or above), or equivalent. Candidates are required to submit transcripts of supporting documents such as first degree. Non UK qualifications may be crosschecked with universities and by consulting the ENIC –NARIC network. Relevant work experience may be taken into consideration. Candidates are also required to demonstrate their proficiency in English (e.g. GCSE, AS Level, A Level, IB, Cambridge

Proficiency Certificate level 4-5, Oxford Higher Certificate, International Certificate Conference (ICC Stage 3 Technical), IELTS of at least 5.5 in each component as well as 6.5 overall.

Candidates with MSci, MEng, MGeol etc that are classed as 4-year undergraduate degrees are suitable applicants as these degrees are not deemed equivalent, by the ELQ criteria, to 180-credit Masters level degrees.

University of Plymouth adopts an inclusive approach to teaching and learning and welcomes applications from disabled students. All applications will be assessed on academic criteria as described above. Once accepted students who declare a disability will be supported by Disability Services who will liaise with the course leader to identify actions which need to be taken. Reasonable adjustments will be considered for all learning environments .

The course has run since 2010 and has proven track record of recruiting (Figure 1) from a truly international cohort of students with 35% of enrolled students from 2016-2020 originating from the EU or overseas.



**Figure 1:** Combined recruitment figures for MRE MSc and MRes from inception through the 2020/21 academic year. MRes numbers never exceeded 1 and was generally 0.

## 10. Progression routes/criteria for progression to Final and Intermediate Awards

The MSc in Offshore Renewable Energy award requires a minimum of 180 Level HE7 credits and is categorised into grades as specified in the University Academic Regulations <https://www.plymouth.ac.uk/student-life/your-studies/essential-information/regulations>

**Exit award titles:**

**Post Graduate Certificate** on completion ( $\geq 50\%$ ) of 60 Level HE7 credits.

**Post Graduate Diploma** on successful completion ( $\geq 50\%$ ) of 120 Level HE7 credits.

### 11. Non Standard Regulations

For accreditation purposes, to pass a module requires a student to achieve at least 40% in both the exam and coursework elements and at least 50% in the overall module mark, or 50% overall if a coursework only module

### 12. Transitional Arrangements for existing students looking to progress onto the programme

It will be possible for part time students or students who failed modules from the former MSc Marine Renewable Energy to complete their studies within the framework of the new scheme as there are only minor alterations to the programme. In all cases the pending changes to the Marine Renewable Energy scheme will be discussed with part time applicants and advice will be given by the programme leader on the selection of first year modules that will be compatible with the new scheme.

2021/22	2022/23
MAR524	PROJ517

In 2022 the option module MAR512 was discontinued. Students requiring to retake this module should instead choose an alternative option module.

## Appendices

### Programme Specification Mapping (PGT)



Appendix 1:

Programme Specification Mapping (PGT): module contribution to the meeting of Award Learning Outcomes

Tick those Award Learning Outcomes the module contributes to through its assessed learning outcomes. Insert rows and columns as required.

Module	Credits	C core E elective	Award Learning Outcomes contributed to (for more information see Section 8)																Compensation Y/N	Assessment element(s) and weightings [use KIS definition] E1 - exam E2 - clinical exam T1 - test C1 - coursework A1 - generic assessment P1 - practical			
			Knowledge & understanding			Cognitive & intellectual skills					Key & transferable skills			Employment related skills				Practical skills					
			1	2		1	2	3	4	5	1	2	3		1	2	3	4			1	2	
MAR513z	20	C		X		X	X	X	X		X	X		X		X	X	X	X			Y	80% C1, 20% P1
MAR534	20	C	X	X		X	X		X	X	X	X	X			X				X		N	100% C1
MAR535	20	C	X			X	X		X	X	X		X		X	X	X			X		Y	100% C1
<b>Learning Outcomes 60 credits</b>																							
MAR507	20	E	X			X	X			X	X	X	X				X	X	X	X		Y	40% P1, 60% T1
MAR530	20	E	X			X			X		X				X	X	X	X				Y	100% C1
MAR518	20	E		X			X			X	X	X				X	X		X			Y	100% C1
MAR519	20	E		X			X		X		X					X	X	X		X		Y	100% C1
MAR536	20	E	X	X		X	X		X	X	X	X					X	X	X			N	50% E1, 50% C1
<b>Learning Outcomes 120 credits</b>																							
PROJ517	60	C	X	X		X	X	X	X	X	X	X			X		X	X	X	X		N	100% C1
<b>Learning Outcomes 180 credits</b>																							
<b>Confirmed Award LOs</b>																							