

# **University of Plymouth**

Faculty of Science and Engineering

School of Engineering, Computing and Mathematics

## **Programme Specification**

MSc Coastal Engineering - 2370

September 2022

## 1. MSc Coastal Engineering

### Final award title

MSc Coastal Engineering

### Level 7 Intermediate award title(s)

Postgraduate Certificate (minimum of 60 credits)

Postgraduate Diploma (minimum of 120 credits)

**UCAS code:** N/A

**HECOS code:** 100544

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

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

## 3. Accrediting body(ies)

The specific content and standards of the degree programme is decided in consultation with industrial representatives and with our professional bodies through accreditation process managed by the Joint Board of Moderators (JBM). The JBM comprises The Institution of Civil Engineers, The Institution of Structural Engineers and The Institute of Highway Engineers and The Chartered Institution of Highways and Transportation.

The programme is accredited as MSc (technical), meeting the further learning requirements for a Chartered Engineer (CEng) who has already acquired an Accredited CEng (Partial) BEng(Hons) or an Accredited IEng (Full) BEng/BSc (Hons) undergraduate first degree.

See [www.jbm.org.uk](http://www.jbm.org.uk) for further information and details of Further Learning programmes for CEng.

This programme is accredited for the 2019-2020 and 2020-21 academic years. Re-accreditation is due in 2021 at the next JBM visit.

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

The distinctive features of the programme include:

- a) research-informed teaching in coastal, port and harbour engineering delivered by one of the largest coastal engineering research groups in the UK
- b) the opportunity to use unrivalled facilities:
  - i. the nationally important COAST Laboratory
  - ii. the Marine Station
- c) a route to working in coastal engineering within government agencies, local authorities and engineering consultancies
- d) the opportunity to undertake a substantial research project on a topic of the students choosing under the supervision of academic staff
- e) hands-on experience of using state-of-the-art software tools
- f) experience of the design and planning of coastal works through the execution of a feasibility study that places programme material in context
- g) choice of Semester 2 modules enabling study across engineering, numerical modelling, policy and marine renewable energy technologies
- h) invitation to attend the Centre for Coastal and Ocean Science and Engineering Research seminars on topics related to their studies
- i) degree accredited as meeting the requirements for Further Learning for a Chartered Engineer (CEng) for candidates who have already acquired an Accredited CEng (Partial) BEng (Hons) or an Accredited IEng (Full) BEng/BSc (Hons) undergraduate first degree.

The Programme delivery is underpinned by the [University of Plymouth Education and Student Experience Strategy 2018-2023](#), specifically:

- a) to be externally recognised for the high quality of our educational provision.
- b) to support and inspire our students to achieve their potential and ambitions.
- c) to nurture a sustainable and collaborative community of scholars recognising the significance of research and evidence-based pedagogy.
- d) to provide an infrastructure and inclusive learning environment that supports our students and staff.

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

The [QAA Engineering Subject Benchmark](#) statement defines the academic standard expected of graduates with an engineering degree. [Master's Degree Characteristics](#) are provided by the QAA.

The learning outcomes fulfil the requirements of those published by the [Engineering Council](#) in the UK Standard for Professional Engineering Competence (UK-SPEC): "[The Accreditation of Higher Education Programmes \(2014\)- 3rd Edition](#)".

## 6. Programme Structure

The one-year programme consists of 180 credits of study at Level 7 and will require students to study over the Summer vacation.

Full-time students would be expected to complete the programme within 12 months. The programme allows for part-time study (in full-time mode) with a recommendation that a minimum of 40 credits is studied in any one academic year and that the dissertation project is completed within 12 months.

The maximum period of registration allowed will be:

- three years for full-time students, and
- five years for part-time students.

The core of the taught programme will be 5 x 20-credit modules and the 60-credit dissertation project. Students are required to choose a further 1 x 20 credit modules out of a possible 3 x 20 credit option modules in semester 2.

Code	Core Modules	Credits	Semester
COUE510	Coastal and Offshore Engineering	20	S1
COUE506	Port & Harbour Engineering	20	S1
MAR513z	Research Skills & Methods	20	S1
COUE508	Advanced Coastal Engineering	20	S2
PRCE508	Interdisciplinary Design Project	20	S2
PROJ517	MSc Dissertation	60	AY
	<b>Option Modules</b>		
MAR518	Remote Sensing & GIS *	20	S2
GEES506	Climate Change: Science and Policy *	20	S2
MAR536	Mechanics of ORE Structures*	20	S2
	<b>Total</b>	<b>180</b>	

\* Semester 2 options – student is required to choose 1 out of 3 options

## 7. Programme Aims

The programme is intended to:

- Broaden knowledge of civil engineering graduates to encompass coastal engineering.
- Provide students opportunity to integrate advanced technical and non-technical aspects of engineering in the context of the coastal environment.
- Develop student's commitment to professional and social responsibility and ethical codes in the context of coastal engineering.
- Provide a Further Learning opportunity for appropriately qualified graduate entrants seeking to complete the educational base required for Chartered Engineer status.
- Provides a research-led postgraduate qualification of benefit to those seeking a more research-focused career.

## 8. Programme Intended Learning Outcomes

### 8.1. Knowledge and understanding

On successful completion graduates should have developed:

- a) a comprehensive **Knowledge and Understanding** of coastal engineering; including analysis and design.
- b) A critical awareness of current problems and/or new insights at the forefront of coastal engineering.
- c) A comprehensive understanding of the relevant **Scientific and Mathematical principles** and methodology necessary to underpin coastal engineering calculations in context, and to investigate new and emerging technologies.

### 8.2. Cognitive and intellectual skills

On successful completion graduates should have developed:

- a) The **intellectual ability** to apply their knowledge and understanding through application of scientific and mathematical techniques to coastal engineering problems. This will include application to unfamiliar situations and the ability to evaluate them critically and to apply them effectively in coastal engineering projects.
- b) The ability to apply appropriate engineering **analytical methods** to solve complex and/or unfamiliar problems in coastal engineering and to assess their limitations.

### 8.3. Key and transferable skills

On successful completion graduates should have developed the ability to:

- a) Apply their skills in problem solving, communication, information retrieval, working with others, and the effective use of general IT facilities
- b) Plan self-learning and improve performance, as the foundation for lifelong learning/CPD
- c) Monitor and adjust a personal programme of work on an on-going basis
- d) Exercise initiative and personal responsibility, which may be as a team member or leader.

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

On successful completion graduates should have developed:

- a) An understanding of '**design**' in the context of coastal engineering to the level that they can create and develop an economically viable solution to meet a defined need, or to adapt their knowledge to unfamiliar situations.
- b) Extensive knowledge and understanding of requirement for sustainable development in Coastal Engineering, including the social, environmental and ethical influences.
- c) Understanding of risk issues and risk management techniques related to Coastal Engineering projects.
- d) A thorough understanding of current management practice, business **practice and legal requirements** associated with Coastal Engineering.
- e) An understanding of different roles within a coastal engineering team.

#### **8.5. Practical skills**

On successful completion graduates should have developed:

- a) Ability to collect data practically that are relevant to coastal engineering problems, either in the laboratory or in the field.
- b) Ability to apply coastal engineering techniques while taking into account a range of commercial and industrial constraints.

(These Learning Outcomes are based on those from [the Accreditation of Higher Education Programmes UK Standard for Professional Engineering Competence Third Ed.](#))

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

Minimum of a lower second class honours degree (2:2) in engineering or physical science subject e.g. Geography, Environmental Science or Physics.

All applicants should possess a grade C in English Language and Maths at GCSE level or a minimum score of 6.5 in IELTS.

Due to some overlap with MEng modules, University of Plymouth MEng Coastal Engineering graduates would not normally be accepted onto this MSc programme.

For APCL, APEL see University of Plymouth Academic Regulations – Accreditation of Prior Learning 2018-19.

### 10. Progression criteria for Final and Intermediate Awards

The MSc in Coastal Engineering award requires minimum of 180 credits at level 7 and is categorised into grades:

Master of Science degree (MSc)	Requires the successful completion of modules worth 180 credits at level 7
Master of Science degree (MSc) with Merit	Achieved with a credit-weighted average mark of 60% or above across all modules and the mark for the dissertation/major project is not less than 60%
Master of Science degree (MSc) with Distinction	Achieved with a credit-weighted average mark of 70% or above across all modules and the mark for the dissertation/major project is not less than 70%.

The additional intermediate awards are awarded when the minimum of 180 credits are not achieved.

Post Graduate Certificate (PGCert)	Requires the successful completion of modules worth 60 credits at level 7
Post Graduate Diploma (PgDip)	Requires the successful completion of modules worth 120 credits at level 7

### 11. Non Standard Regulations

In the MSc Coastal Engineering programme the following modules cannot be compensated: COUE510, COUE506, COUE508, MAR536, PRCE508, PROJ517.

The pass mark for a module at Level 7 is 50%. To satisfy accreditation requirements where module assessment involves more than one element, students must achieve at least 40% in each element.

## **12. Transitional Arrangements**

In Sept 2022 the option module MAR512 was discontinued. Students needing to repeat MAR512 should take a different option module.

COUE510 replaces COUE509 from Sept 2021. Any student needing to repeat COUE509 should take COUE510.

PRCE508 is a core module from Sept 2021, and students choose one option from MAR518, MAR512 and MAR536. Prior to this students choose two options from MAR528z, MAR512, MAR518 and MAR706. MAR528Z and MAR706 are no longer offered as options on this programme:

- Students needing to repeat MAR528Z should take MAR536 instead.
- MAR706 will no longer be available from Sept 2021 as a 20 credit module. Students needing to repeat MAR706 should discuss with the Programme Lead alternative option modules to take.

## **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 T1 - test C1 - coursework P1 - practical		
			Knowledge & understanding			Cognitive & intellectual skills		Key & transferable skills				Employment related skills				Practical skills				
			(a)	(b)	(c)	(a)	(b)	(a)	(b)	(c)	(d)	(a)	(b)	(c)	(d)	(a)			(b)	
COUE510	20	C	x	x	x	x		x				x	x	x	x	x		N	50% C1, 50% E1	
COUE506	20	C	x	x			x					x	x				x	N	30% C1, 70% E1	
MAR513z	20	C				x	x	x	x		x							Y	80% C1, 20% P1	
<b>Learning Outcomes 60 credits</b>																				
COUE508	20	C	x		x	x	x					x					x	x	N	100 % C1
PRCE508	20	C	x	x		x		x	x	x	x					x		x	N	100% C1
MAR518	20	E	x				x	x									x		Y	100% C1
GEES506	20	E		x				x					x		x				Y	100% C1
MAR536	20	E	x				x					x		x					Y	50% C1, 50% E1
<b>Learning Outcomes 120 credits</b>																				
PROJ517	60	C		x		x	x	x		x	x						x		N	100% C1
<b>Learning Outcomes 180 credits</b>																				

