

Programme Specification for Postgraduate Programme Leading to: MSc Flood and Coastal Engineering

Applicable for all postgraduate students **starting in 2021**

Version No.	Date	Notes – Quality Assurance USE ONLY	AO
2021.22 v1	25 August 2020	Programme for new entrants in September 2021.	JP
Postgraduate Taught Programme			
1. Awarding institution	Brunel University London		
2. Teaching institution(s)	Brunel University London		
3. Home college/department/division	College of Engineering, Design and Physical Sciences/Department of Civil and Environmental Engineering		
4. Contributing college/department/division/associated institution	HR Wallingford		
5. Programme accredited by	Joint Board of Moderators (JBM).		
6. Final award(s) and FHEQ Level of Award	MSc Flood and Coastal Engineering (FHEQ Level 7)		
7. Programme title	MSc Flood and Coastal Engineering		
8. N/A			
9. Normal length of programme (in months) for each mode of study	FT (12 months) PT (24 months)		
10. Maximum period of registration for each mode of study	Normal or standard duration plus two years up to a maximum of five years		
11. Variation(s) to September start	None		
12. Modes of study	Full-time – one year Part-time – two years		
13. Modes of delivery	Block		
14. Intermediate awards and titles and FHEQ Level of Award	MSc Flood Management – see Section 25 below. PGCert Flood and Coastal Engineering PGDip Flood and Coastal Engineering		
15. UCAS Code	N/A		
16. HECoS Code	(100180/100544)		
17. Route Code	H220PFLDCTL		
18. Relevant subject benchmark statements and other external and internal reference points used to inform programme design	UK Quality Code for Higher Education QAA Subject Benchmark Statement (Engineering) Brunel University London 2030 Brunel Placement Learning Policy, as published under the 'Placements' section of the Managing Higher Education Provision with Others page. Joint Board of Moderators Guidelines for Education Providers		
19. Admission Requirements	Details of PGT entry requirements are provided on the University's and College website. Levels of English for non-native speakers are outlined on Brunel International's language requirements pages.		
20. Other relevant information (e.g. study abroad, additional information on placements)	None		

21. Programme regulations not specified in Senate Regulation 3. Any departure from regulations specified in Senate Regulation 3 must be stated here and approved by Senate.	None
22. Further information about the programme is available from the College website.	Link to programme information on the College website

23. EDUCATIONAL AIMS OF THE PROGRAMME

The primary educational aim of this programme is to develop the advanced technical engineering understanding and skills required to plan, design, implement and manage projects and strategies dealing with flood and coastal risk mitigation and management. The specific aims are:

- To provide the advanced and critical technical knowledge and skills necessary to work as graduate civil engineers in general, and flood and coastal engineering in particular;
- To build on the prior experiences of the students, developing critical thinking throughout, and challenging students to be creative and innovative engineers of the future, with effective communication skills
- To develop skills in understanding and evaluating the suitability of traditional and novel technologies, concepts, techniques and services in flood and coastal engineering
- To develop a broader overview and understanding of the work environment and potential career pathways

24. PROGRAMME AND INTERMEDIATE LEARNING OUTCOMES

The programme provides opportunities for students to develop and demonstrate knowledge and understanding (K) cognitive (thinking) skills (C) and other skills and attributes (S) in the following areas:

Level	Category (K = knowledge and understanding, C = cognitive (thinking) skills, S = other skills and attributes)	Learning Outcome	Masters Award Only	Associated Assessment Blocks Code(s)	Associated Study Blocks Code(s)	Associated Modular Blocks Code(s)
7						
	K, C	Critically select and use appropriate methods for the analysis of a range of types of data		CE5802_CN	CE5700_SB CE5702_SB	CE5609_CN CE5610_CN
	K, C	Apply critical assessment to explain the role of different processes in river and coastal settings		CE5801_CN CE5802_CN	CE5700_SB CE5701_SB CE5703_SB	
	C	Collect and critically interpret evidence to explain site physical conditions		CE5801_CN	CE5700_SB CE5610_CN _SB	CE5610_CN
	K, C	Assess past and potential future change in river and coastal settings and consider the implications for engineering		CE5800_CN CE5802_CN CE5801_CN	CE5700_SB CE5701_SB CE5703_SB	
	K, C	Critically evaluate appropriate methods to produce creative and innovative design for surface and subsurface structures		CE5803_CB	CE5702_SB	CE5610_CN

	K, C	Critically evaluate and investigate possible traditional and innovative engineering materials for use in flood and coastal projects		CE5803_CB	CE5702_SB	CE5610_CN
	K, C, S	Apply and evaluate programming and modelling approaches for flood and coastal engineering		CE5802_CN CE5803_CB	CE5703_SB	CE5609_CN
	K, C	Critically assess the role of regulatory agencies and stakeholders in flood and coastal risk management		CE5800_CN CE5803_CB	CE5700_SB CE5701_SB	
	C, S	Identify and produce effective communication on flood and coastal engineering topics for different stakeholder groups		CE5801_CN CE5803_CB	CE5701_SB	CE5609_CN
	C	Apply informed judgement in the analysis of professional development needs				CE5614_CB
	K, C, S	Conduct a substantial, in depth and critical investigation into an aspect of flood or coastal engineering	CE5600			

Learning/teaching strategies and methods to enable learning outcomes to be achieved, including formative assessments

The MSc programme is led by Brunel University London, in partnership with Hydraulics Research Wallingford Ltd (HRW). All modules, study and assessment blocks are coordinated by Brunel staff.

A formative 'bootcamp' induction experience will be held at the start of the programme to: introduce the programme format and requirements; start to develop cohort identity; and introduce students to major themes in the flood and coastal engineering sector.

This programme incorporates full- and part-time modes of study. The majority of students taking this programme are expected to be in employment and will be registered part-time. To support this, delivery will be completed as residential blocks, each typically 5 days, with material from two modules/study blocks included in each week. In the time between contact weeks, students will be supported via the University's e-Learning platform with learning and formative assessment materials. Many of the students are expected to be working for organisations involved in flood relief so the programme is designed to be flexible in anticipation of students being required to work during a major flood event.

During the contact weeks, students will be introduced to subject material, such as key concepts, information and approaches, through a mixture of standard lectures, tutorials and seminars, laboratory practicals, field work, self-study skills and individual research reports. Students will be prepared for summative assessment through formative learning activities including mock exams. The aim is to challenge students and inspire them to critically expand their own knowledge and understanding.

Students will develop their ability to apply theoretical understanding to applied problems in a critical way. This will be supported by facilities at Brunel and HRW, together with site visits. Case examples and design project topics will be drawn from industry partners, for example the Environment Agency.

Existing skills will be enhanced within the programme through the development of 'soft' skills such as communication, planning, management and team work. This will be supported by the University's central services, principally the Library, ASK team and Professional Development Centre, as well as personal tutors. In addition, guest speakers from industry, such as senior personnel from the Environment Agency, will provide a valuable advanced insight into the real world of civil engineering. Alongside the curriculum, a formative professional development programme will take place – supported by personal tutor meetings, input from external professionals (e.g. from the Environment Agency) – via talks, workshops and site visits, and central University activities such as the Brunel+ award.

Finally, the summer school involves an intensive 5 days of contact time at HRW (with preparatory and follow up work) which provides students with a refresh experience midway through the summer interval, and the opportunity to experience world class experimental facilities and contact with senior industry figures. This is a stand-alone zero credit-weighted module which must be passed.

All students will be able to engage with extra-curricular activities e.g. those held by CivSoc, the civil engineering student society, and Innovia, the women in STEM and Design society. Students will be encouraged to join and become involved with activities organised by the professional institutions.

Summative assessment strategies and methods to enable learning outcomes to be demonstrated.

Summative assessment will allow students to demonstrate their abilities in a range of styles relevant to professional Engineers. Students will be prepared for the summative assessments through formative learning, including formative assessments.

- Assignments; – demonstration of depth and breadth of knowledge, evaluation and written communication skills
- Technical analytical reports; lab reports – ability to collect, analyse and critically interpret a range of evidence, including in the field and laboratory
- Design reports – ability to use imagination, creativity, innovation and judgement to address a specification
- Individual Design Project – ability to plan, execute and communicate a substantial design
- Presentations and posters – ability to summarise and communicate orally and visually
- Closed book examinations – ability to quickly formulate arguments and solve problems; testing knowledge, critical understanding and problem solving in the main subject areas in flood & costal engineering

25. Programme Structure, progression and award requirements

Programme structures and features: levels, assessment blocks, credit and progression and award requirements

- **Compulsory block:** one which all students registered for the award are required to take as part of their programme of study. These will be listed in the left hand column;
- **Optional block:** one which students choose from an 'option range'. These will be listed in the right hand column;
- A **core assessment** is an assessment identified within an assessment block or modular block (either compulsory or optional) which must be passed (at grade C- or better) in order to be eligible to progress and to be eligible for the final award. All core assessments must be specified on the programme specification next to the appropriate assessment or modular block:

Where students are expected to pass the block at C- or better, but not necessarily all elements, then the block itself is core.

e.g. AB5500 Project (40)

Core: Block

Where only some elements of assessments are required to be passed at C- or better, these will be identified by listing each element that is core

e.g. ABXXX1 Title (XX credits)

Core: 1 & 4

Where students are expected to pass all assessments in a block then this will be identified. By setting the assessment this way, students are also required to pass the block by default. This will be identified thus:

e.g. ABXXXX Title (XX credits)

Core: All, Block

- A **non-core assessment** does not have to be passed at grade C- or better, but must D- or better in order to be eligible for the final award.

FHEQ Level 7	
Compulsory assessment block codes, titles and credit Year 1 CE5800_CN Flood and Coastal Science and Risk Theory (20 credits) CE5801_CN River and Coastal Methods (20 credits)	Optional assessment block codes, titles and credits
Compulsory assessment block codes, titles and credit Year 2 CE5802_CN Flood and Coastal Engineering and Modelling Theory (20 credits) CE5803_CB Flood and Coastal Engineering Design Project (20 credits) CORE	Optional assessment block codes, titles and credits
Compulsory study block codes, titles and credit volume Year 1 CE5700_SB River and Coastal Science (20 credits) CE5701_SB Flood and Coastal Risk, Management, Sustainability and Governance (20 credits)	Optional Study block codes, titles and credit volume
Compulsory study block codes, titles and credits Year 2 CE5702_SB Flood and Coastal Engineering and Design (20 credits) CE5703_SB Modelling, Data Management and Programming for Flood and Coastal Engineering (20 credits)	Optional modular block codes, titles and credits
Compulsory modular block codes, titles and credits Year 1 CE5609_CN - Mathematical Methods, Data and GIS (20 credits) Year 1 & 2 CE5614_CB Flood and Coastal Engineering Professional Development and Summer School (0 credits) CORE CE5600 – Dissertation (60 credits) CORE Year 2 CE5610_CN - Structures, Soil Mechanics and Design for Flood and Coastal Engineering (20 credits)	Optional modular block codes, titles and credits
FHEQ Level 7 Progression and Award Requirements As per Senate Regulation 3 Students who fail CE5614_CB Flood and Coastal Engineering Professional Development and Summer School but, successfully complete all 120 taught credits and the 60-credit dissertation will be awarded an MSc in Flood Management A PGDip may be awarded by substitution of the dissertation (CE5600) for up to 30 credits of modular/assessment blocks in the taught part of the programme, provided the learning outcomes have been met.	

Please note: this specification provides a concise summary of the main features of the programme and the learning outcomes that a student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. More detailed information on the learning outcomes, content and teaching, learning and assessment methods can be found in the study, assessment and modular outlines and other programme and module information. The accuracy of the information contained in this document is reviewed by the University from time to time and whenever a major modification occurs.