MSc Civil Engineering with Environmental Engineering

Programme Specification

Primary Purpose

Course management and quality assurance.

Secondary Purpose

Detailed information for students, staff and employers. Current students should refer to the related Course Handbook for further detail.

Disclaimer

The University of Portsmouth has checked the information given in this Programme Specification. We will endeavour to deliver the course in keeping with this Programme Specification; however, changes may sometimes be required arising from annual monitoring, student feedback, review and update of units and courses. Where this activity leads to significant changes to units and courses, there will be prior consultation of students and others, wherever possible, and the University will take all reasonable steps to minimize disruption to students. It is also possible that the University may not be able to offer a unit or course for reasons outside of its control, for example; the absence of a member of staff or low student registration numbers. Where this is the case, the University will endeavour to inform applicants and students as soon as possible. Where appropriate, the University will facilitate the transfer of affected students to another suitable course.

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Course Details

1. Named Awards

MSc Civil Engineering with Environmental Engineering

2. Course Code (and UCAS Code if applicable)

C1372 F/P

3. Awarding Body

University of Portsmouth

4. Teaching Institution

University of Portsmouth

5. Accrediting Body

JBM (IStructE/ICE/IHIE/IHT)

6. QAA Benchmark Groups

Engineering

7. Document Control Information

Version 12, October 2018

8. Effective Session

2018/2019

9. Author

D Begg

10. Faculty

Faculty of Technology

11. Department

School of Civil Engineering and Surveying

Curriculum

12. Educational Aims

- To broaden and extend the undergraduate construction project management knowledge, understanding and skill base to a level 7, Masters Qualification.
- To provide an advanced educational experience that develops intellectual and practical skills.
- To provide an opportunity for students to develop as critically reflective practitioners in their chosen specialism.
- To provide students with the opportunity to develop research in a critical perspective.

- To provide students with the opportunity to develop key and professional skills.

13. • Reference Points

- University of Portsmouth Curriculum Framework
- The scholarship and research expertise of academic members of staff
- The QAA UK Quality Code for Higher Education
- Framework for Higher Education Qualifications (FHEQ) National Qualifications Framework
- Engineering Requirements of Professional Body, namely, Joint Board of Moderators

The core elements of UK-SPEC, interpreted for further learning to Master's level, and in the context of Civil Engineering are:

Underpinning science and mathematics (SM)

Mathematical methods appropriate to civil engineering. Scientific principles underlying civil engineering topics. These topics include: structural integrity, deformation and stability; properties of materials used in modern construction; behaviour of soils and rocks.

Engineering Analysis (EA)

Application of mathematical and scientific principles in the solution of practical engineering problems. Use of advanced civil engineering software such as LUSAS (finite element modelling) and OASYS (geotechnical suite) to model analyse and solve engineering problems.

Design (D)

Interpretation of briefs, development and assessment of alternative solutions and specification of final design.

Economic, social and environmental context (ESE)

Management applied to construction organisations. Sustainability and environmental considerations.

Engineering Practice (EP)

Investigation of cutting edge practice in civil engineering. Including materials, methods of construction and application of standards.

14. General Learning Outcomes

Level 7

Master's degrees are awarded to students who have demonstrated:

- a systematic understanding of knowledge, and a critical awareness of current problems and/or new insights, much of which is at, or informed by, the forefront of their academic discipline, field of study or area of professional practice
- a comprehensive understanding of techniques applicable to their own research or advanced scholarship
- originality in the application of knowledge, together with a practical understanding of how established techniques of research and enquiry are used to create and interpret knowledge in the discipline
- conceptual understanding that enables the student:
  - to evaluate critically current research and advanced scholarship in the discipline
  - to evaluate methodologies and develop critiques of them and, where appropriate, to propose new hypotheses

Typically, holders of the qualification will be able to:

- deal with complex issues both systematically and creatively, make sound judgements in the absence of complete data, and communicate their conclusions clearly to specialist and non-specialist audiences
- demonstrate self-direction and originality in tackling and solving problems, and act autonomously in planning and implementing tasks at a professional or equivalent level
- continue to advance their knowledge and understanding, and to develop new skills to a high level

And holders will have:

- the qualities and transferable skills necessary for employment requiring:
  - the exercise of initiative and personal responsibility
  - decision-making in complex and unpredictable situations
- the independent learning ability required for continuing professional development

15. Learning Outcomes

A. Knowledge and Understanding of:

A.1 Ideas, concepts, research methodologies and arguments at an advanced level of study (SM, EA, EP)
A.2 Critical evaluation of current research (EP)
A.3 Structural and Geotechnical Analysis and Design (SM, EA, D)
A.4 Environmental Engineering and Management (SM, EA, ESE, D)
A.5 Strategic management policies for successful project management (ESE, EP)
A.6 Effective project management strategies (ESE, D)

B. Cognitive (Intellectual or Thinking) Skills, able to:

B.1 Analyse and critically examine different solutions to engineering problems. (EA)
B.2 Conceptualise, investigate and develop project management techniques, utilising knowledge from the forefront and limits of the discipline. (ESE)
B.3 Synthesise projects that integrate technical, environmental and practical requirements. (D)
B.4 Exercise informed and reflective judgement in the research and formulation of briefs as relevant to specific contexts and circumstances in the development of economic and sustainable infrastructure. (EP)
B.5 Critically evaluate advanced research and methodologies and argue alternative approaches. (EP)
B.6 Gather, integrate and synthesise material, critically evaluate its significance within appropriate intellectual frameworks and apply in self-directed and original ways as part of autonomous research. (ES)
B.7 Apply knowledge and skills in resolving conflicting requirements within projects in the built environment. (ESE)

C. Practical (Professional or Subject) Skills, able to:

The MSc Civil Engineering with Environmental Engineering is specifically designed to provide the professional skills required for career progression to Chartered status.

C.1 Confidently and competently use skills appropriate to professional communications. Demonstrate this by presentations, reports and dissertations (ESE, EP).
C.2 Develop ideas in ways which demonstrative adaptability and imagination and apply them to new situations (D).
C.3 Initiate, develop and implement distinctive engineering solutions (D).
C.4 Apply scholarly conventions of academic writing consistently and accurately (EP).

D. Transferable (Graduate and Employability) Skills, able to:

D.1 Demonstrate advanced communication skills in appropriate formats (D).

D.2 Advance the ability to present an effective, coherent and sustained argument and attend to the critical responses of others (D).
D.3 Use IT effectively and appropriately to select, analyse, present and communicate information from a variety of sources (EA).
D.4 Work autonomously and in groups, prioritising and exercising management of workload (D).

16. Learning and Teaching Strategies and Methods

Core knowledge is acquired through lectures, tutorials, seminars and project and fieldwork as appropriate (A1 – A6). Individual knowledge is supported by directed reading and guided research. Students engage in a supervised individual research project in the summer (A1, A2).

Seminars and supportive lecture programmes (B1, B2, B3 and B7); Discursive tutorials (B2, B3, and B4); and Independent Research Project (B5, B6 and B7).

The course is largely taught by experienced Civil Engineers with an innate understanding of the required standard of Professional skills.

Seminars, group and individual tutorial support (C1 and C3). Individual or group skills by directed self study and report and presentation requirements (C1, C2, C3, and C4) Independent Research Project (C3 and C4).

Problem solving skills, report writing and the extensive use of IT are synonymous with the nature of the course.

17. Assessment Strategy

Testing of core knowledge and individual understanding is through a mix of unseen examinations, group and individual coursework, oral presentations and individual reports (A1 – A6).

Through a mix of unseen examinations (B1, B2, B3), group and individual coursework (B1, B2, B3, B4), individual reports and presentations (B5, B6, B7).

Through a mix of unseen examinations (C1, C2, C3, C4), group and individual coursework (C1, C2, C3, C4), individual reports and presentations (C1, C2, C3, C4,).

Through a mix of individual coursework (D1, D2, D3) and both group individual reports and presentations (D1, D2, D3, D4).

18. Course Structure, Progression and Award Requirements

See Unit Web Search[1] for full details on the course structure and units

Units are offered at 30 credits, being equivalent to 300 hours of learning. The Independent Project is 60 credits, equivalent to 600 hours of study. The course operates on a calendar year time scale in both the full and part-time modes. Award Boards are convened annually after the end of the summer.

The School has strong links with industry with excellent career opportunities at both undergraduate and postgraduate levels.

A Master of Science award requires 180 credits. The award may be given with Merit for good performance and Distinction for outstanding performance.

A Postgraduate Diploma requires at least 120 credits. The award may be given with Merit for good performance and Distinction for outstanding performance.

A Postgraduate Certificate requires at least 60 credits from taught units.

[1] www.port.ac.uk/unitwebsearch

19. Employability Statement

All postgraduate units offered by the School are accredited by The Institution of Civil Engineers on behalf of Engineering Council as being suitable to provide the Matching Section required for progression to Chartered status. This means that the curriculum is recognised as equipping graduates with knowledge, skills and competences that employers in the construction industry expect. Alongside the technical subjects, the curriculum introduces students to commercial and interpersonal skills topics that illustrate the employment context of construction industry professionals.

The student's development of career management skills is supported by an Industrial Liaison Officer (ILO) who liaises with the University Careers Office as and when necessary. The ILO supports students in preparation of CVs and letters of application.

Furthermore, the ILO arranges visits and/or presentations from leading employers (over a dozen every year) who talk to students about work in the construction industry and skills required. With these visitors, students have the opportunity to have mock and/or real interviews as well as collect information that helps them in career decision making.

The School has a longstanding and active Industrial Advisory Committee (IAC) which meets twice per year. The IAC is comprised of senior executives from leading client, contracting and consulting organisations (some of whom are alumni). It provides useful input in the design/redesign of courses and units. Furthermore, all academic staff are professionally engaged with many and varied links with the construction industry and professional bodies. The above ensure that the course continues to meet the expectations of the construction industry.

Through the School's personal tutor system, students are supported regularly on Personal Development Planning issues. This generally involves identification of the student's strengths and weaknesses and development and implementation of strategies to address the weaknesses using resources internal/external to the University.

Over the last ten or so years, the employment rate of Civil Engineering graduates of all disciplines has, for all practical purposes, been 100%. Although, in the past, a buoyant construction industry has contributed to this exemplary record, it is believed that the main contributing factors are the School's curriculum, its delivery, and opportunities for students to interact with the industry as they pursue their studies. The School is committed to maintaining this standard.

Course Management

20. Support for Student Learning

- The Course is managed by a Course Leader.
- Extensive induction programme introduces the student to the University and their course.
- Overseas student induction.
- Each student has a personal tutor, responsible for pastoral support and guidance.
- University support services include careers, financial advice, housing, counselling etc.
- The Academic Skills Unit (ASK).
- The Additional Support and Disability Advice Centre (ASDAC).
- Excellent computer suites and library facilities.
- The University of Portsmouth has consistently been awarded an excellent rating for student support and guidance in a number of Quality Assurance Agency inspections.
- Student course and unit handbooks provide information about the course structure and University regulations etc.
- Feedback is provided for all assessments.
- Personal Development Planning (PDP) for all awards.

21. Admissions Criteria

A. Academic Admissions Criteria

Normally at least a good second class honours from a construction related undergraduate course, or equivalent. Students without this level of qualification but with appropriate industrial experience and/or qualifications will be assessed on an individual basis. Students holding international qualifications will be assessed on an individual basis.

B. Disability

The University makes no distinction in its admissions policy with regard to disability and will endeavour to make all reasonable adjustments in order to make it possible for students to study at Portsmouth on a course of their choice.

22. Evaluation and Enhancement of Standards and Quality in Learning and Teaching

A. Mechanisms for Review and Evaluation

- Course Leader's Annual Standards and Quality Evaluative Review.
- Head of School's Annual Standards and Quality Evaluative Review.
- Unit and Course Level student feedback considered at Board of Studies.
- Unit Assessment Board consideration of student performance for each programme.
- Annual Standards and Quality Reports to Board of Studies, including consideration of Subject and Award External Examiner Reports.
- Periodic Programme Review.
- Student Representatives and Student/Staff Consultative Committees.
- National Student Survey.
- Staff Performance and Development Review.
- Peer Review and Development Framework.
- Faculty Learning and Teaching Committee.

B. Responsibilities for Monitoring and Evaluation

- Unit Co-ordinators for unit content and delivery.
- Course Leader for day-to-day running of course.
- Board of Studies with overall responsibilities for operation and content of course.
- Head of School.
- Associate Dean (Academic).
- Associate Dean (Students).
- Quality Assurance Committee.
- Unit, Award and Progression Board of Examiners

C. Mechanisms for Gaining Student Feedback

- Student Representation on Board of Studies.
- Student Staff Consultative Committees.
- Unit and Course level student feedback questionnaires.
- University participates in external student surveys, eg National Student Survey (NSS), Postgraduate Research Experience Survey (PRES) and International Student Barometer (ISB).

D. Staff Development Priorities

- Academic staff undertake activities related to research, scholarship, teaching and learning and student support and guidance.

- Annual staff performance and development reviews match development to needs.
- Managers undertake a variety of management development programmes.
- All academic staff encouraged to seek Higher Education Academy membership.
- Academic staff new to teaching required to undertake Initial Professional Development Programme (iPROF).
- Support Staff are encouraged to attend short courses in areas such as minute taking, and specific IT packages.

23. Assessment Regulations

The current University of Portsmouth academic regulations will apply to this programme (*see Assessment and Regulations*[2]).

24. Role of Externals

Subject External Examiners who will:

- Oversee unit assessment and usually attend Unit Assessment Boards
- Review unit assessment strategy
- Sample assessment artefacts
- Present report to Unit Assessment Boards

Award External Examiners (usually also a Subject External Examiner) who will:

- Oversee and attend Award/Progression Boards
- Scrutinise and endorse the outcomes of assessment
- Ensure that the standard of the award is maintained at a level comparable with that of similar awards elsewhere in the United Kingdom

25. Indicators of Standards and Quality

A. Professional Accreditation/Recognition

All postgraduate units offered by the School are approved by the ICE on behalf of Engineering Council as being suitable to provide the Further Learning required for progression to Chartered status.

B. Periodic Programme Review (or equivalent)

Successful Periodic Programme Review September 2016, confirming both fitness of purpose of curriculum and effectiveness of annual monitoring and review processes.

C. Quality Assurance Agency

QAA Higher Education Review, March 2015, judgements about standards and quality meet UK expectations (*for full report see Higher Education Review of the University of Portsmouth, March 2015*[3]).

D. Others

None.

26. Further Information

Further information may be found in:

- Student Handbook

[2] http://www2.port.ac.uk/departments/services/academicregistry/qmd/assessmentandregulations/

[3] https://www.qaa.ac.uk/docs/qaa/reports/university-of-portsmouth-her-15.pdf?sfvrsn=5071f581_4

- University of Portsmouth Curriculum Framework Document
- University of Portsmouth Prospectus
- University of Portsmouth[4] and School[5] websites

[4] www.port.ac.uk/

[5] www.port.ac.uk/school-of-civil-engineering-and-surveying/