PROGRAMME SPECIFICATION

Master of Engineering (SW) in Civil Engineering

Awarding institution	Liverpool John Moores University
Teaching institution	LJMU
UCAS Code	H202
JACS Code	H200
Programme Duration	Full-Time: 4 Years, Sandwich Thick: 5 Years
Language of Programme	All LJMU programmes are delivered and assessed in English
Subject benchmark statement	Engineering (2010)
Programme accredited by	Joint Board of Moderators (JBM) on behalf of: the Institution of Civil Engineers (ICE), the Institution of Structural Engineers (IStructE), the Chartered Institution of Highways and Transportation (CIHT) and the Institute of Highway Engineers (IHE).
Description of accreditation	This degree is accredited as fully meeting the academic requirements for registration as a Chartered Engineer.
Validated target and alternative exit awards	Master of Engineering in Civil Engineering Master of Engineering (SW) in Civil Engineering Bachelor of Engineering with Honours in Civil Engineering Bachelor of Engineering Honours (SW) in Civil Engineering Bachelor of Engineering in Civil Engineering Bachelor of Engineering (SW) in Civil Engineering Diploma of Higher Education in Civil Engineering Certificate of Higher Education in Civil Engineering
Programme Leader	Edward Loffill

Educational aims of the programme

To provide a well-balanced education which allows the student to achieve his/her full academic potential and in doing so to facilitate the development of independent logical thought and judgement.

To enable the student to develop his/her intellectual, analytical and critical abilities in order that he/she might exercise those abilities within Civil Engineering.

To produce a basis for general professional experience and to develop a critical understanding of the professional, business and commercial environment.

To facilitate the development of transferable and graduate employability skills and an awareness of the need to plan, develop and record life long learning.

To provide the framework within which students can achieve the level of attainment, appropriate to their abilities in the context of the programme of study that provides recognition of that level.

To offer the student the opportunity for applying knowledge and understanding in the workplace via a placement year.

To provide a medium for Honours students to explore the potential of their acquired knowledge and to pursue those aspects which they find most stimulating.

To widen access to the programmes by recognising and allowing credits for prior certificated learning and/or prior experiential learning (APL/APEL), or by credit transfer.

To develop skills to ensure that the graduate will operate within a sound Health and Safety framework as provided by the regulatory framework of the industry.

To develop critical awareness of all aspects of sustainability to ensure that graduates operate responsibly within their chosen discipline, and make positive choices in this context.

To ensure that Civil Engineering students develop their own identity. Civil Engineering graduates are concerned with the design of major construction projects, usually infrastructure work such as roads, tunnels and bridges. Civil Engineering graduates can choose to work in a design office where they will apply high level numeracy skills to practical design projects. Alternatively, they may choose to work for a contractor and manage the construction process for these types of work. They need detailed knowledge and understanding of structures, hydraulics, geotechnics and materials used in construction. They need to have skills such as setting out, land surveying and computer aided design.

To encourage students to fully engage with the World of Work programme, including World of Work Skills Certificate and, as a first step towards this, to complete Bronze (Self Awareness) Statement.

Alternative Exit/ Interim Award Learning Outcomes - Certificate of Higher Education

A student who is eligible for this award will be able to:

Demonstrate a sound knowledge of the basic concepts of Civil Engineering related subjects and have learned how to take different approaches to solving problems.

Target award Learning Outcomes - Master of Engineering (SW)

A student successfully completing the programme of study will have acquired the following subject knowledge and understanding as well as skills and other attributes.

A student who is eligible for this award will be able to:

1. Apply appropriate mathematical methods.

2. Understand the scientific principles underpinning Civil Engineering.

3. Make appropriate use of the principles of ITC relevant to Civil Engineering.

4. Apply the general principles of design.

5. Design within civil engineering.

6. Understand the characteristics of engineering materials and construction materials.

7. Manage, using commercial considerations, Civil Engineering projects.

8. Recognise the moral and ethical issues of construction, sustainability, the environment, and scientific enquiry and experimentation.

9. Apply effective project implementation within Civil Engineering Practice.

10. Apply codes of practice and the regulatory framework.

11. Undertake management and application of safe systems of work and evaluation of these systems.

12. Select and apply appropriate mathematical methods for modelling and analysing civil engineering problems.

13. Use scientific principles in the development of engineering solutions to practical problems of a non-routine nature.

14. Use scientific principles in the modelling and analysis of civil engineering structures, systems, and processes.

15. Select and evaluate appropriate computer based methods for modelling and analysing engineering problems.

16. Produce solutions to problems through synthesis of ideas from a wide range of sources.

17. Undertake elements of technical and commercial risk evaluation.

18. Act responsibly in the achievement of the `triple bottom line' (social, economic and environmental) outcomes.

19. Produce solutions to problems through the application of engineering knowledge and understanding.

20. Undertake and evaluate research and develop and communicate ideas.

21. Use appropriate mathematical methods for modelling and analysing civil engineering problems.

22. Use relevant testing and measurement equipment safely.

23. Undertake experimental laboratory and field work.

24. Use engineering IT tools.

25. Design civil engineering structures, processes and systems.

26. Take an appropriate role in commercial and industrial situations.

27. Undertake practical testing of design ideas in laboratory or through simulation to generate data for technical analysis and critical evaluation.

28. Research for information to develop and critically appraise ideas.

29. Apply Project Management techniques.

30. Analyse data effectively.

31. Present of data in a variety of ways.

32. Use scientific evidence based methods in the solution of problems.

33. Use general and specific ICT tools effectively.

34. Undertake creative problem solving.

35. Work with limited or contradictory information.

36. Communicate effectively.

37. Undertake life long learning.

38. Apply the engineering approach to the solution of problems.

39. Apply time and resource management.

40. Demonstrate awareness of needs of others, and creation of good working relationships; teamwork and leadership.

41. Evaluate CPD outcomes.

Teaching, Learning and Assessment

The methods used to enable outcomes to be achieved and demonstrated are as follows:

Lectures, tutorials, problem solving sessions, seminars, workshops, laboratory and computer sessions, off-site learning activities, participation in group projects and individual investigational/research project.

Unseen examinations, assignments, preparation of reports, design tasks, oral presentations, workshops, peer review, computer-based exercises, work placement reports.

Programme structure - programme rules and modules

The programme is offered on a full-time, part-time and sandwich basis. Entry to the course can be at level 4, 5 or 6 for suitably qualified candidates.

For students on a sandwich course the industrial training year takes place at the end of level 5. Employment on industrial placement must be for a minimum of 48 weeks with an approved civil engineering company or organisation. Each student is allocated an industrial training tutor, who visits the work place and monitors their progress. Progression to level 6, for sandwich students, is dependent on submission of an acceptable industrial training report.

For part-time students attendance is normally for one full day per week, plus a number of individual days of full time attendance for laboratory and off-site learning activities as determined by the Programme Leader.

Credit must be attained from all the core modules detailed to achieve the MEng (Hons) Civil Engineering. Students who do not attain credit from all the modules may be eligible for alternative exit awards.

In line with the requirements of the professional body, compensation may normally only be applied for a maximum of 20 credits.

Level 7	Potential Awards on completion	Master of Engineering (SW)
Core	Option	Award Requirements
7004BEPG SUSTAINABLE INFRASTRUCTURE IN DEVELOPING COUNTRIES (20 credits) 7007BEPG ENERGY MANAGEMENT (20 credits)		120 core credits at level 7 0 option credits at level 7

7102BEUG ENGINEERING DESIGN PROJECT (60 credits) 7103BEUG STRUCTURAL AND EARTHQUAKE ENGINEERING (20 credits)		

Level 6	Potential Awards on completion	
Core	Option	Award Requirements
6101BEUG ADVANCED CIVIL ENGINEERING MATERIALS (24 credits) 6102BEUG ADVANCED STRUCTURAL DESIGN (24 credits) 6107BEUG ENGINEERING RESEARCH PROJECT (24 credits) 6122BEUG RISK MANAGEMENT (24 credits) 6123BEUG RIVER, COASTAL AND GROUNDWATER ENGINEERING (24 credits)		120 core credits at level 6 0 option credits at level 6

Level 5	Potential Awards on completion	
Core	Option	Award Requirements
5100BEUG APPLIED ENGINEERING MATHEMATICS (24 credits) 5106BEUG CONSTRUCTION MANAGEMENT PROJECT (24 credits) 5115BEUG GEOTECHNICS (24 credits) 5123BEUG STRUCTURAL ANALYSIS AND DESIGN (24 credits) 5124BEUG SURVEYING (24 credits)		120 core credits at level 5 0 option credits at level 5

Level 4	Potential Awards on completion	
Core	Option	Award Requirements
4102BEUG CIVIL ENGINEERING PROJECT (24 credits) 4105BEUG CONSTRUCTION PRACTICE (24 credits) 4109BEUG ENGINEERING MATHEMATICS (24 credits) 4111BEUG HYDRAULICS, WATER AND WASTEWATER (24 credits) 4119BEUG STRUCTURES AND MATERIALS (24 credits)		120 core credits at level 4 0 option credits at level 4

Information about assessment regulations

All programmes leading to LJMU awards operate within the University's Academic Framework.
https://www.ljmu.ac.uk/about-us/public-information/academic-quality-and-regulations/academic-framework

Opportunities for work-related learning (location and nature of activities)

The industrial training year provides a work based learning opportunity for students studying the programme in sandwich mode.

The programme has active links with industry and involves employers in the industrial projects at each level of the programme. Real world case studies are used wherever possible.

Criteria for admission

A/AS Level
Level 4: 128 UCAS points: Minimum Two A2 levels

Irish Leaving Certificate
Level 4 : 128 UCAS points; minimum 3 subjects at Higher level

Scottish Higher
Level 4 : 128 UCAS points; minimum 2 subjects at Advanced Higher level

International Baccalaureate
24 IB points

Higher national diploma
HNC/HND (Cognate)

Level 4 Entry: Pass

Level 5 Entry: Pass with Merits in 96 credits from level 5 modules.

Other
Foundation degree

Level 5 entry: Foundation Degree in Civil Engineering with a final award mark of at least 65%.

BSc in Civil Engineering

Level 6 entry: Appropriate degree in Civil Engineering from an approved institution, with a mean mark of at least 60% in the final year.

Progression from JMU B.Eng in Civil Engineering

Level 6 entry: available for JMU students who have completed level 5 JMU B.Eng in Civil Engineering with a capped mean mark from all level 5 modules of at least 55%.

Overseas qualifications
Overseas student applicants must have the equivalent qualifications as UK students. In addition they must have achieved an IELTS score of at least 6.

External Quality Benchmarks

All programmes leading to LJMU awards have been designed and approved in accordance with the UK Quality Code for Higher Education, including the Framework for Higher Education Qualifications in the UK (FHEQ) and subject benchmark statements where applicable.

The University is subject to periodic review of its quality and standards by the Quality Assurance Agency (QAA) Published review reports are available on the QAA website at www.qaa.ac.uk

Programmes which are professionally accredited are reviewed by professional, statutory and regulatory bodies (PSRBs) and such programmes must meet the competencies/standards of those PSRBs.

Support for students and their learning

The University aims to provide students with access to appropriate and timely information, support and guidance to ensure that they are able to benefit fully from their time at LJMU. All students are assigned a Personal Tutor to provide academic support and when necessary signpost students to the appropriate University support services.

Students are able to access a range of professional services including:

- Advice on practical aspects of study and how to use these opportunities to support and enhance their personal and academic development. This includes support for placements and careers guidance.
- Student Advice and Wellbeing Services provide students with advice, support and information, particularly in the areas of: student funding and financial matters, disability, advice and support to international students, study support, accommodation, health, wellbeing and counselling.
- Students studying for an LJMU award at a partner organisation will have access to local support services

Methods for evaluating and improving the quality and standards of teaching and learning

Student Feedback and Evaluation

The University uses the results of student feedback from internal and external student surveys (such as module

evaluations, the NSS and PTES), module evaluation questionnaires and meetings with student representatives to improve the quality of programmes.

Staff development

The quality of teaching is assured through staff review and staff development in learning, teaching and assessment.

Internal Review

All programmes are reviewed annually and periodically, informed by a range of data and feedback, to ensure quality and standards of programmes and to make improvements to programmes.

External Examining

External examiners are appointed to programmes to assess whether:

- the University is maintaining the threshold academic standards set for awards in accordance with the FHEQ and applicable subject benchmark statements
- the assessment process measures student achievement rigorously and fairly against the intended outcomes of the programme(s) and is conducted in line with University policies and regulations
- the academic standards are comparable with those in other UK higher education institutions of which external examiners have experience
- the achievement of students are comparable with those in other UK higher education institutions of which the external examiners have experience

and to provide informative comment and recommendations on:

- good practice and innovation relating to learning, teaching and assessment observed by external examiners
- opportunities to enhance the quality of the learning opportunities provided to students

Please note:

This specification provides a concise summary of the main features of the programme and the learning outcomes that a typical 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, teaching, learning and assessment methods of each module can be found in module and programme guides.