

Programme Specification

MEng Architectural Engineering

For students entering Part 1 in September 2023

UCAS Code: K260

UFARCENGM

UFARCENGMWY

This document sets out key information about your Programme and forms part of your Terms and Conditions with the University of Reading.

| | |
|--|--|
| Awarding Institution | University of Reading |
| Teaching Institution | University of Reading |
| Length of Programme | 4 years |
| Length of Programme with placement/year abroad | MEng Architectural Engineering with Year in Industry - 5 years (internal transfer only) |
| Accreditation | Accreditation to be sought from the <u>Chartered Institution of Building Services Engineers (CIBSE)</u> and Energy Institute (EI). |

Programme information and content

The programme aims to provide you with a thorough Integrated Master degree level education in Architectural engineering, enabling you to deliver engineering solutions to solve problems in the built Environment.

Based on a grounding in the fundamental principles of engineering, architectural concepts and relevant aspects of built environment in both building and urban level, the programme covers the design, management and operation of the resource efficient buildings within urban context. Major areas covered include design and management of building environmental systems and urban energy systems, structural design, building pathology, construction site engineering, architectural design, digital technologies with focus on numerical modelling and programming.

The programme will prepare students for subsequent PhD studies or for pursuing a career in the built environment industry or academia by providing:

- Practical, experimental and laboratory-based engineering experience in the design and management of buildings within the broader context of urban Environment;
- Problem solving skills;
- Underpinning skills in mathematics, programming and relevant science and technology;
- Knowledge of the state-of-the-art in building and environmental systems as applied in design and management of built environment;
- Understanding of ethics and health and safety issues associated with design, construction and management of built environment;
- The ability to work in an academic, industrial or research environment as individuals or as part of a team;
- The ability to plan, manage and conduct an in-depth individual project in architectural engineering.

| | |
|------------------------------|---|
| | <ul style="list-style-type: none"> • Critical awareness of current problems and new insights at the forefront of architectural engineering; • 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 field of architectural engineering. • Conceptual understanding that will enable you to evaluate critically current research and advanced scholarship, to evaluate methodologies and develop critiques of them, and to propose new hypotheses. |
| Part 1: | Introduces the fundamental underpinning principles and techniques in architecture, science and engineering needed for a career in architectural engineering. |
| Part 2: | Provides knowledge and understanding in more advanced areas of architectural engineering, building upon the fundamentals learned in Part 1. Part 2 provides students with the opportunity to work in teams to design and develop an engineering solution for a real-world engineering need in built environment. |
| Placement/Study abroad year: | The MEng Architectural Engineering with Industrial Year includes a year-long industrial placement/study abroad. Many students find that the experience and knowledge gained during the industrial placement/study abroad allows them to make better use of their final year of University study and provides useful background knowledge for more permanent career choices. |
| Part 3: | Gives you the opportunity to specialise in the areas of Architectural Engineering that interest you the most, with a wide range of options informed by current research. You will gain experience of planning, managing and conducting an in-depth research project in architectural engineering. |
| Part 4: | Part 4 of the MEng programme has a strong research focus. You will conduct a substantial individual research project of relevance to current research in the School. Modules will provide you with knowledge and understanding of topics at the cutting edge of architectural engineering, energy and environment research. |

| | | | |
|---|-----------------------------------|----------------|--------------|
| Module information | | | |
| Each part comprises 120 credits, allocated across a range of compulsory and optional modules as shown below. Compulsory modules are listed. | | | |
| Part 1 Modules: | | | |
| Module | Name | Credits | Level |
| CE1BSF | Building Services 1: Fundamentals | 10 | 4 |

| | | | |
|---------|---|----|---|
| CE1CES | Empirical Studies | 10 | 4 |
| CE1CIC2 | Information and Communication | 20 | 4 |
| CE1CMP | Principles of Management | 10 | 4 |
| CE1CSE | Construction Site Engineering | 10 | 4 |
| CE1DPR | Design Project 1 | 10 | 4 |
| CE1EMA | Engineering Mathematics 1 | 10 | 4 |
| CE1HBE | History of the built environment: space, design, and technology | 10 | 4 |
| CE1MSA | Materials and structural analysis | 10 | 4 |
| CE1NMP | Numerical modelling and programming 1 | 10 | 4 |
| CE1THT | Thermodynamics and Heat Transfer | 10 | 4 |

Part 2 Modules:

| Module | Name | Credits | Level |
|--------|--|---------|-------|
| CE2ADE | Architectural Design 1 | 20 | 5 |
| CE2BSF | Building Services 2: Fundamentals | 10 | 5 |
| CE2CBP | Building Pathology | 10 | 5 |
| CE2CMB | Management in the Built Environment | 10 | 5 |
| CE2CRS | Research Skills | 10 | 5 |
| CE2DPR | Design Project 2 | 10 | 5 |
| CE2EMA | Engineering Mathematics 2 | 10 | 5 |
| CE2FMT | Fluids Mechanics: theory and application | 10 | 5 |
| CE2NMP | Numerical Modelling and Programming 2 | 20 | 5 |
| CE2STS | Statistical analysis 1 | 10 | 5 |

Modules during a placement year or study year (if applicable):

| Module | Name | Credits | Level |
|--------|-------------------------------|---------|-------|
| CE3YIN | Construction Year in Industry | 120 | 6 |

If you take a year-long placement or study abroad, Part 3 as described below may be subject to variation.

If you take a year-long placement or study abroad, Part 3 as described below may be subject to variation.

Part 3 Modules:

| Module | Name | Credits | Level |
|--------|--|---------|-------|
| CE3ADE | Architectural Design 2 | 20 | 6 |
| CE3CDT | Digital Technology Use in Construction | 10 | 6 |
| CE3CIE | Inclusive Environments | 10 | 6 |
| CE3CS1 | Sustainability | 10 | 6 |
| CE3DPR | Design Project 3 | 40 | 6 |

| | | | |
|--------|---|----|---|
| CE3HVA | Heating Ventilation and air conditioning design | 10 | 6 |
| CE3STS | Statistical analysis 2 | 10 | 6 |

Remaining credits will be made up of part 3 modules from the School of the Built Environment.

Part 4 modules:

| Module | Name | Credits | Level |
|--------|----------------------------|---------|-------|
| CEM10A | Research skills | 20 | M |
| CEM10B | Research dissertation | 40 | M |
| CEM16A | Renewable Energy Systems A | 20 | M |
| CEM223 | Urban Microclimates | 10 | M |
| CEM226 | ICT and Energy Management | 10 | M |

Remaining credits will be made up of postgraduate modules from the School of the Built Environment

Optional modules:

The optional modules available can vary from year to year. An indicative list of the range of optional modules for your Programme is set out in the Further Programme Information. Details of optional modules for each part, including any Additional Costs associated with the optional modules, will be made available to you prior to the beginning of the Part in which they are to be taken and you will be given an opportunity to express interest in the optional modules that you would like to take. Entry to optional modules will be at the discretion of the University and subject to availability and may be subject to pre-requisites, such as completion of another module. Although the University tries to ensure you are able to take the optional modules in which you have expressed interest this cannot be guaranteed.

Additional costs of the programme

The additional costs for the programme are around £300 per year for essential textbooks. Required and recommended textbooks may often be available second-hand at lower cost and some copies are normally available in the University Library. Costs are indicative but will vary on the basis of module choice and are subject to inflation and other price fluctuations.

Placement opportunities

Placement: You will be provided with the opportunity to undertake a credit-bearing placement as part of your Programme. You will be required to find and secure a placement opportunity, with the support of the University.

Study Abroad: You will be provided with the opportunity to undertake a credit-bearing placement as part of your Programme. You will be required to find and secure a placement opportunity, with the support of the University.

Teaching and learning delivery:

You will be taught through lectures, seminars, tutorials, project work and experimental work

Total study hours for each Part of your programme will be 1200 hours. The contact hours for your programme will depend upon your module combination; an average for a typical set of modules on this programme is Part 1 - 340 hours, Part 2 - 300 hours, Part 3 - 280 hours and Part 4- 250. In addition to your scheduled contact hours, you will be expected to undertake guided independent study. Information about module contact hours and the amount of independent study which a student is normally expected to undertake for a module is indicated in the relevant module description.

Accreditation details

If accreditation of this programme is approved, graduates from this programme may, after a period of professional experience, together with other appropriate educational requirements, apply for Chartered Engineer status.

The assessment of your work, your progression through your Programme and your Integrated Master degree classification are governed by the University's Student Regulations.

The assessment of your work, your progression through your Programme and your Integrated Master degree classification are governed by the University's Student Regulations.

Assessment

The programme will be assessed through a combination of written examinations and coursework.

Progression

Part 1

In order to progress from Part 1 to Part 2, a student shall normally be required to:

- i. achieve an overall weighted average of 40% over 120 credits taken in Part1, and
- ii. achieve a mark of at least 30% in individual modules amounting to not less than 100 credits taken in Part 1.

The achievement of a threshold performance at Part 1 qualifies a student for a Certificate of Higher Education if they leave the University before completing the subsequent Parts.

Part 2

In order to progress from Part 2 to Part 3, a student shall normally be required to:

- i. achieve an overall weighted average of 40% over 120 credits taken in Part 2; and
- ii. achieve a mark of at least 40% in 80 credits taken in Part 2, and a mark of at least 30% in 120 credits taken in Part 2,

The achievement of a threshold performance at Part 2 qualifies the student for a Diploma of Higher Education if he or she leaves the University before completing the subsequent Part.

In order to progress from Part 2 to Part 3 in the 4-year programme, a student must achieve a threshold performance and obtain a pass in the professional/work placement or study abroad year. Students who fail the professional/work placement year, transfer to the non-placement year version of the programme.

Part 3

In order to progress from Part 3 to Part 4, a student shall normally be required to:

- i. achieve an overall weighted average of at least 40% over 120 credits taken in Part 3, and
- ii. a mark of at least 40% in individual modules amounting to not less than 100 credits taken in Part 3;
- iii. a mark of at least 30% in individual modules amounting to not less than 120 credits taken in Part 3.
- iv. A mark of at least 40% in the Part 3 major project module ((Design Project 3, AE3-DPR)

Students who do not meet the above requirements for progression to Part 4 will be eligible for the award of BEng if they achieve:

- i. a mark of at least 40% in individual modules in Part 3 amounting to not less than 80 credits; and
- ii. a mark of at least 40% in the Part 3 major project module (Design Project 3, AE3-DPR).

The University's honours classification scheme for this programme is based on the following Mark interpretation:

Where the conditions for a higher class have been met, the higher class should be awarded.

First Class:

- i. 80 credits in the Final Part with marks of at least 50 and, an overall weighted average of at least 70 or

- ii. An overall weighted average of at least 68, provided that half or more of the weighted credits have a mark in the range 70-100 or
- iii. An overall weighted average of at least 68, provided that the average for modules taken in the Final Part is 70 or more.

Upper Second Class:

- i. 80 credits in the Final Part with marks of at least 50 and, an overall weighted average within the range 60.0-69.9, or
- ii. An overall weighted average of at least 58, provided that half or more of the weighted credits have a mark of 60 or more, or
- iii. An overall weighted average of at least 58, provided that the average for modules taken in the Final Part is 60 or more.

Lower Second Class

- i. 80 credits in the Final Part with marks of at least 50 and, an overall weighted average within the range 50.0-59.9, or
- ii. An overall weighted average of at least 48, provided that half or more of the weighted credits have a mark of 50 or more, or
- iii. An overall weighted average of at least 48, provided that the average for modules taken in the Final Part is 50 or more.

Third Class:

- i. 80 credits in the Final Part with marks of at least 50 and an overall weighted average within the range 40.0-49.9, or
- ii. An overall weighted average of at least 38, provided that half or more of the weighted credits have a mark of 40 or more, or
- iii. An overall weighted average of at least 38, provided that the average for modules taken in the Final Part is 40 or more

Fail:

Students who do not fulfil the above-mentioned criteria and any supplementary conventions shall be stated to have failed. Students who have failed may be eligible for a lesser award.

The weighting of the Parts in the calculation of the Integrated Master degree classification is:

Part 2 20%

Part 3 40%

Part 4 40%

Note1: The result of Pass is not available for Integrated Master's programmes.

Note 2: Placement/Study Abroad Year is not included in the classification

Note 3 : For further information about classifications for awarding of this programme please refer to the University of Reading [Assessment Handbook, Section 18](#)

For further information about your Programme please refer to the Programme Handbook and the relevant module descriptions, which are available at <http://www.reading.ac.uk/module/>. The Programme Handbook and the relevant module descriptions do not form part of your Terms and Conditions with the University of Reading.

MEng Architectural Engineering for students entering Part 1 in session 2023/24

13 October 2022

© The University of Reading 2022