

## Programme Specification

**MEng Architectural Engineering**

**For students entering Part 1 in September 2021**

**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</u> (CIBSE) and Energy Institute (EI). Students must achieve a 2:2 or above in order to graduate with an accredited degree.

### **Programme information and content**

The programme aims to provide you with a thorough 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;

	<ul style="list-style-type: none"> <li>• The ability to plan, manage and conduct an in-depth individual project in architectural engineering.</li> <li>• Critical awareness of current problems and new insights at the forefront of architectural engineering;</li> <li>• 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.</li> <li>• 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.</li> </ul>
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
AA2DS3	Architecture Design – Skills in 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
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	20	5
CE2STS	Statistical analysis 1	10	5

Remaining credits will be made up of part 2 modules from the School of the Built Environment.

**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.

**Part 3 Modules:**

Module	Name	Credits	Level
AA3DS5	Architecture Design –Complexity	20	6
CE3CDT	Digital Technology Use in Construction	10	6
CE3CIE	Inclusive Environments	10	6
CE3DPR	Design Project 3	40	6
CE3HVA	Heating Ventilation and air conditioning design	10	6
CE3RES	Resource Efficient Built Environments	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
CEM16A	Renewable Energy Systems A	20	M
CEM18A	Engineering Research and Dissertation	20	M
CEM18B	Engineering Research and Dissertation	40	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 1600 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 degree classification are governed by the University's Student Regulations.

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### **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 Part 1, 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 degree classification is:

Part 2 20%

Part 3 40%

Part 4 40%

Note 1: 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 2021/22  
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