



## **Programme Specification**

### **Architecture and Environmental Engineering [Frenchay]**

Version: 2024-25, v2.0, 19 Jun 2024

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## Section 1: Key Programme Details

### Part A: Programme Information

**Programme title:** Architecture and Environmental Engineering [Frenchay]

**Highest award:** BEng (Hons) Architecture and Environmental Engineering

**Interim award:** BSc (Hons) Built Environment

**Interim award:** BSc Built Environment

**Interim award:** DipHE Architecture and Environmental Engineering

**Interim award:** CertHE Architecture and Environmental Engineering

**Awarding institution:** UWE Bristol

**Teaching institutions:** UWE Bristol

**Study abroad:** No

**Year abroad:** No

**Sandwich year:** Yes

**Credit recognition:** No

**School responsible for the programme:** CATE School of Architecture and Environment, College of Arts, Technology and Environment

**Professional, statutory or regulatory bodies:**

Architects Registration Board (ARB)

Board of Architects Malaysia

Chartered Institution of Building Services Engineers (CIBSE)

Royal Institute of British Architects (RIBA)

**Modes of delivery:** Full-time, Sandwich

**Entry requirements:**

**For implementation from:** 01 September 2024

**Programme code:** KH1J00

## Section 2: Programme Overview, Aims and Learning Outcomes

### Part A: Programme Overview, Aims and Learning Outcomes

**Overview:** BEng(Hons) Architecture and Environmental Engineering is a four year undergraduate programme designed to meet the requirements for prescription by the Architects Registration Board (ARB) and validation by the Royal Institute of British Architects (RIBA) as a Part 1 qualification in architecture, an essential step towards becoming a registered architect in the UK and to meet the academic requirements of the Chartered Institute of Building Services Engineers (CIBSE).

**Features of the programme:** The Faculty of Environment and Technology has a strong commitment to interdisciplinary professional education, as is evident in the design of all its undergraduate programmes. It offers a number of jointly validated professional degrees including Property Development and Planning (PDP) and Architecture and Planning (A and P) which is prescribed by the Architects Registration Board (ARB) and Royal Institute of British Architects (RIBA) as a part 1 qualification in architecture and is validated by the Royal Town Planning Institute (RTPI). A and P was the first dual accredited architecture and planning programme in the UK. BEng (Hons) Architecture Environmental Engineering (A and EE is designed to sit alongside A and P sharing some of its modules and creating further opportunities for linkages between disciplines.

The programme brings together the curricular and outcome requirements of the (RIBA) and the Architects' Registration Board (ARB) with those of the Chartered Institute of Building Services Engineers (CIBSE) and is designed to be validated by both professions: by RIBA and ARB as giving exemption from the RIBA Part 1 examination, by CIBSE as providing the first step in the academic route to Chartered Engineer status.

The programme aims to educate practitioners and researchers who are equipped for

careers in architecture and the building services/environmental design professionals and who possess a unique appreciate of buildings and performance. Highly creative architect-engineers able to work both intuitively and analytically can make a significant contribution to the development of a new generation of buildings the meet the challenges imposed by climate change and resource depletion.

Whichever path graduates choose to follow, having a dual qualification in architecture and environmental engineering will open up a wide range of opportunities in the job market.

**Educational Aims:** The programme aims to educate critically engaged architectural and environmental engineering professionals with an ethically responsible attitude towards society, clients, users and the environment. The inter-professional ethos of the Department of Architecture Built Environment and the particular academic character of UWE's suite of undergraduate degree courses set the context for the programme. Three themes: people, context and sustainability underlie the structure of this design-led programme that draws on the department's research in architecture, urban design, contextual studies, health, sustainability and engineering. The programme fosters an understanding of the wider professional, cultural and social setting within which the architect and engineer operate, the organisation of the construction industry and its inter-professional nature, and the management of architectural and engineering practice.

The knowledge and skills developed in the programme are conceived in the context of the general criteria and graduate attributes contained in the RIBA/ARB criteria for validation/prescription that are derived from the requirements of article 46 of the EU Qualifications Directive and echoed in the QAA Benchmark Statement for Architecture. The programme also is designed to meet the requirements of CIBSE, Engineering Council UK, (preparatory to CEng qualification) and the QAA Benchmark Statement for Engineering.

**Programme Learning Outcomes:**

On successful completion of this programme graduates will achieve the following learning outcomes.

**Knowledge and Understanding**

- A1. The nature of architectural and engineering design and the design process
- A2. The relevant engineering principles and mathematical methods to the analysis and solution of building design problems
- A3. The concepts and principles of sustainable development and the environmental design of buildings and associated technologies
- A4. Building structures, construction and the properties of materials and building fabric and mechanical systems as modifiers of the external environment
- A5. Mathematical models (and their limitations) used in the environmental design of buildings
- A6. The changing contexts (economic, social, cultural, political, spatial, and environmental) of building design and ability to engage in debate about how these might be interpreted
- A7. The needs of clients and users of building, the social and ethical responsibilities of architects and engineers and the social consequences of development
- A8. The framework of statutory regulation, codes of practice and issues relating to health and safety within the built environment
- A9. The processes of the procurement of buildings and their engineering systems, with regard to finance, law, quality control, and business practice
- A10. The role of IT in supporting architects, engineers and other construction professionals
- A11. The roles played by other built environment professions, and the distinct perspectives which they bring to bear in the development process

**Intellectual Skills**

- B1. Apply reflective, critical, analytical and imaginative reasoning in the design of buildings
- B2. Apply knowledge, and evidence-based reasoning to design problems with objective outcomes

- B3. Understand a range of approaches to architectural composition and the manipulation of space
- B4. Select and apply a range of analytical methods to define parameters and to model physical phenomena
- B5. Evaluate critically the designs of others and to be able to accept criticism as part of an evolving creative process
- B6. Respond creatively to the needs of building users, sponsors and the wider community and bring to bear an ethically informed perspective embracing environmental and social responsibilities
- B7. Make links between areas of the course and wider social, economic and environmental issues and apply the understanding of place and context to the design of buildings
- B8. To use rigorous research methods (qualitative and quantitative) to produce well argued, well researched written work based on evidence
- B9. To engage in fair negotiation with others while offering persuasive arguments in support of concepts, results, and ideas
- B10. To recognise when existing knowledge or skills are insufficient to the task

### **Subject/Professional Practice Skills**

- C1. Apply analytical skills and broadly based knowledge of structure, construction, materials and environmental performance to the design of resource-efficient buildings
- C2. Appreciate the values and needs of different groups in society and mediate between the requirements of the client and users of buildings
- C3. Make informed ethical judgments at the level of responsibility of the professional to the client and in the wider social and environmental context
- C4. Understand all stages of the design and construction process, including feasibility analysis, sketch and detailed design, installation, commissioning, and feedback appraisal
- C5. Master the conventions of architectural and engineering representation in two and three dimensions
- C6. Select and use scientific and technical equipment and specialist analytical tools in experimental investigations of building fabric and systems and the solution of design problems

- C7. Undertake research and data collection and demonstrate a clear and analytical writing style suited to the professional role of the architect and engineer
- C8. Maintain a professional approach to self-appraisal, personal development, and to relationships with clients and colleagues

### **Transferable Skills and other attributes**

- D1. Draw conceptually and observationally
- D2. To identify, access, research, manipulate and interpret data
- D3. Deploy evidence and reasoning in support of decisions
- D4. Communicate orally, in writing, graphically to a high standard
- D5. To be competent in the use of word processing, data gathering, modelling and analytic software
- D6. Work independently and as part of single-discipline or multi-discipline teams with a broad awareness of equal opportunities issues

**Assessment strategy:** The degree classification is based upon the best marks achieved across 300 credits at Levels 2 and 3. In calculating the classification marks for the best 200 credits at Level 3 are weighted at three times the next best 100 credits at Level 2 and above. The mark for the final year design module must be included within the 200 Level 3 credit pool of marks to be weighted at three times the next best 100 credits at Level 2 or above.

Knowledge and Understanding:

Knowledge and understanding are assessed through a portfolio of design projects, examinations, the technical research study and a variety of other coursework assignments.

Intellectual Skills:

Discussion and critique of the students' portfolio of design studio work, both at

interim and final stages.

Presentations and reflective reports design, theory and engineering modules.

Coursework of lecture based modules.

Examinations in lecture based modules.

Technical research study and other extended written assignments.

**Subject, Professional and Practice Skills:**

Design related skills are assessed in interim and final reviews and through the submission of a portfolio of design studio work.

Other skills are assessed through observation of student demonstrations, for example in laboratory reports or workshop exercises and reflective reports based on the results of practical work.

**Transferable Skills and Other Attributes:**

Transferable skills are explicitly assessed through the modules within which they are introduced. Thereafter these skills will be assessed as a requirement of all pieces of working including the design projects, core planning modules and technical modules. Team working will be assessed through the presentations and reports required for the inter-professional modules.

**Student support:**



## Part B: Programme Structure

### Year 1

Full-time and Sandwich students must take 120 credits from the modules in Year 1.

#### Year 1 Compulsory Modules (Full-time and Sandwich)

Full-time and Sandwich students must take 120 credits from the modules in Compulsory Modules (Full-time and Sandwich).

Module Code	Module Title	Credit
UBLLYC-60-1	Design Studio 1 2024-25	60
UBLLWQ-15-1	Engineering Principles (Building Engineering) 2024-25	15
UBLMSS-30-1	Environmental Physics and Materials 2024-25	30
UFMFYG-15-1	Mathematics for Civil and Environmental Engineering 2024-25	15

### Year 2

Full-time and Sandwich students must take 120 credits from the modules in Year 2.

#### Year 2 Compulsory Modules (Full-time and Sandwich)

Full-time and Sandwich students must take 120 credits from the modules in Compulsory Modules (Full-time and Sandwich).

Module Code	Module Title	Credit
UBLMTB-30-2	Building Services Applications 2025-26	30
UBLMTV-15-2	Design Representation 2025-26	15
UBLMD1-15-2	Histories and Theories of Architecture 2025-26	15
UBLMNV-15-2	Research and Design Strategies 2025-26	15

UBLMXE-45-2	Studio 2 2025-26	45
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**Year 3**

Full-time and Sandwich students must take 120 credits from the modules in Year 3.

**Year 3 Compulsory Modules (Full-time and Sandwich)**

Full-time and Sandwich students must take 120 credits from the modules in Compulsory Modules (Full-time and Sandwich).

<b>Module Code</b>	<b>Module Title</b>	<b>Credit</b>
UFMFF7-15-2	Applications of Mathematics in Civil and Environmental Engineering 2026-27	15
UBLMRE-45-3	Design and Engineering Studio 3 2026-27	45
UBLMHP-15-3	Interactive Systems and Comfort Controls 2026-27	15
UBLMN7-30-3	Low Carbon Building Services 2026-27	30
UBLMYV-15-3	Theories of Architecture and Design 2026-27	15

**Year 4**

Full-time students must take 120 credits from the modules in Year 4.

Sandwich students must take 15 credits from the modules in Year 4.

**Year 4 Compulsory Modules (Full-time)**

Full-time students must take 120 credits from the modules in Compulsory Modules (Full-time).

<b>Module Code</b>	<b>Module Title</b>	<b>Credit</b>
UBLMNE-15-3	Collaborative Practice 2027-28	15
UBLMRV-60-3	Design and Engineering Studio 4 2027-28	60
UBLMGP-15-3	Energy Management and Performance Evaluation 2027-28	15

UBLMPB-30-3	Mechanical Services 2027-28	30
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#### **Year 4 Compulsory Modules Placement (Sandwich)**

Sandwich students must take 15 credits from the modules in Compulsory Modules Placement (Sandwich).

<b>Module Code</b>	<b>Module Title</b>	<b>Credit</b>
UBLMG4-15-3	Work-Based Research Project 2027-28	15

#### **Year 5**

Sandwich students must take 105 credits from the modules in Year 5.

#### **Year 5 Compulsory Modules (Sandwich)**

Sandwich students must take 105 credits from the modules in Compulsory Modules (Sandwich).

<b>Module Code</b>	<b>Module Title</b>	<b>Credit</b>
UBLMRV-60-3	Design and Engineering Studio 4 2028-29	60
UBLMGP-15-3	Energy Management and Performance Evaluation 2028-29	15
UBLMPB-30-3	Mechanical Services 2028-29	30

### **Part C: Higher Education Achievement Record (HEAR) Synopsis**

BEng(Hons) Architecture and Environmental Engineering is a four year undergraduate programme designed to meet the requirements for prescription by the Architects Registration Board (ARB) and validation by the Royal Institute of British Architects (RIBA) as a Part 1 qualification in architecture, an essential step towards becoming a registered architect in the UK and to meet the academic requirements of the Chartered Institute of Building Services Engineers (CIBSE).

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of Planning and Architecture and the particular academic character of UWE's suite of undergraduate degree courses set the context for the programme. Three themes: people, context and sustainability underlie the structure of his design-led programme that draws on the department's research in architecture, urban design, contextual studies, health, sustainability and engineering. The programme fosters understanding of the wider professional, cultural and social setting within which the architect operates, the organisation of the construction industry and its inter-professional nature and the management of architectural and engineering practice.

### **Part D: External Reference Points and Benchmarks**

Description of how the following reference points and benchmarks have been used in the design of the programme:

The curriculum, learning methods, aims and learning outcomes of this award respond to the guidelines and requirements of the EU, the Royal Institute of British Architects (RIBA) and the Architects Registration Board (ARB) and the QAA benchmark statement for architecture and engineering:

EU Directive 2005/36/EC on the Recognition of Professional Qualifications: Article 46 Training of Architects

Procedures for Validation and Validation Criteria for UK and International Courses and Examinations in Architecture RIBA 2011

Prescription of Qualifications: ARB Criteria at Parts 1,2 and 3 ARB 2011

UK standard for Professional Engineering Competence: ECuk

CIBSE Requirements

QAA publications subject benchmark statements:

QAA Architecture benchmark statement QAA361 09/10

QAA Engineering benchmark statement 09/2010

We also have looked at:

UWE Employability Strategy

QAA code of practice: section 8 Career Education, information, advice and guidance

UWE Widening Participation Strategy

UWE Sustainability Strategy

UWE Teaching and Learning Strategy

### **Part E: Regulations**

Approved to variant University Regulations and Procedures.

The following variant regulation for compensation applies to students on this award which has been accredited by a PSRB that comes under the auspices of Engineering Council UK.

The variant applies from 2024-25 Award Boards onwards (Note - Compensation applied to all levels not just new students).

- The permitted maximum compensated credit is 30 credits for a Bachelors or Integrated Masters degree and a maximum of 20 credits in a Masters degree.

- The awarding of compensated credit may be considered for an overall module mark in the range 30% to 39% for Levels 4-6 and 40%-49% for Level 7.

No excused credit.