Programme Details

Programme Code: D1E1-AEI
Department: Architectural Engineering
Main Award: MENG - Master of Engineering
Full Award Title: Master of Engineering in Architectural Engineering with International Studies
Level: Undergraduate

Location of Study

<table>
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<tr>
<th>Edinburgh</th>
<th>Y</th>
<th>Scottish Borders</th>
<th>N</th>
<th>Orkney</th>
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Associated Awards

<table>
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<tr>
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<tbody>
<tr>
<td>D1E1-AEI</td>
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<td>Master of Engineering in Architectural Engineering with International Studies</td>
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<tr>
<td>D1E1-ZZZ</td>
<td>BENGH</td>
<td>Bachelor of Engineering in Architectural Engineering with International Studies</td>
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</table>

Accreditation

CIBSE and EI

Learning Outcomes – Subject Mastery

Understanding, Knowledge and Cognitive Skills

- Fundamentals of the main Architectural Engineering specialisms;
D1E1-AEI Master of Engineering in Architectural Engineering with International Studies

- Building Services Engineering theory, design and practice.
- Energy Efficient Construction, Sustainable Development and Environmental friendly design.
- Behavioural responses of people to their environments.
- Fluid mechanics
- Water Conservation
- Aural, Visual and Thermal Environmental Assessment
- Construction Technology and Principles of Structures.
- Health and Safety regulations.
- Principles of Management, Contracts and Procurement and Value and Risk management.
- Sustainable building design
- Carbon management.
- Management and business practices which form the basis of modern Architectural Engineering management.
- Fundamentals of Mathematics and Science as applicable in the context of sustainable building design and Architectural Engineering.
- Comprehensive understanding and knowledge of the concepts, principles and theories of specialist technical issues, as selected by the student to meet their professional aspirations.
- Transfer problem-solving skills to a variety of contexts
- Integrate theory and practice
- Apply numerical, scientific and management skills

Scholarship, Enquiry and Research (Research Informed Learning)

- Conduct and analyse results from laboratory exercises relevant to the science of engineering
- Ability to plan, conduct and report a self-directed research project
- Transfer problem-solving skills to a variety of contexts
- Apply numerical skills and engineering knowledge in the analysis of a novel problem.
- Integrate theory and practice

Apply theory to sustainable building design in collaboration with colleagues and industrial partners.

LEARNING OUTCOMES – PERSONAL ABILITIES

Industrial, Commercial and Professional Practice

- Appreciate the roles of the Architectural Engineer
- Appreciate the roles of other Built Environment professions.
- Use British and International Standards and codes of practice in project, laboratory and design tasks.
- Management and business practices which form the basis of modern Architectural Engineering management.
- The ethics and standards relevant to professional engineering practice.
- Framework and practice with regard to health and safety

Autonomy, Accountability and Working With Others
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- Work effectively within a small team.
- Interact constructively with other professions in the Built Environment in a multi-disciplinary team.
- The social and environmental impact of Architectural Engineering.
- Experience an international perspective on engineering and engineering education.
- Work effectively in design teams whilst studying abroad.

**Communication, Numeracy & Information and Communications Technology**

- Clearly and concisely report results from laboratory and desk study investigations relevant to the science of engineering.
- Apply IT and specialist software to the analysis of sustainable building design.
- Present and defend outcomes from a self-directed research project.
- Present and defend outcomes from a design project.
- CV preparation

**APPROACHES TO TEACHING AND LEARNING**

The Architectural Engineering programme provides a flexible, student-centred, and resource-based learning and teaching environment, which actively promotes a deep approach to learning. At each stage, learning and teaching resources include lectures, tutorials, seminars, workshops and task-based activities. As the course progresses, the emphasis switches from group based lectures to individual student-led tutorials and small group self-learning activities, and students are encouraged to take greater responsibility for their own learning. The techniques adopted include library and computer-based facilities, specific project based modules designed to integrate the knowledge based covered at each stage and develop transferable skills, directed reading, case studies, dissertations, coursework and problem-solving classes.

Approaches to learning and teaching are reviewed and assessed by the course Leader and Director of Studies on an annual basis. The review and redesign of techniques and methods adopted are obtained from student questionnaires, comments from the Student-Staff Committee, pass rates and external examiners’ reports.

Specific details about learning and teaching methods are provided in the appropriate module descriptors.

**EDUCATIONAL AIMS OF THE PROGRAMME**

The programme aims to:

- Provide students with a broad understanding of a wide range of aspects of the built environment.
• Provide appropriate depth of technical knowledge and understanding of the key engineering topics within architectural engineering
• Equip students with a sound basis in fundamental engineering principles and their application in the context of sustainable building design and analysis.
• Match a professional and technical education to the needs and aspirations of individuals.
• Produce high quality graduates with the understanding, knowledge, skills and personal qualities required to undertake a wide range of careers across the construction industry in building, general contracting, consultancy or advanced research.
• Develop problem-solving and conceptual skills and the ability to apply such skills to solve real design and decision problems.
• Enable students to undertake complex engineering projects of a multidisciplinary nature and of direct relevance to industry.
• Encourage awareness of the engineering industry and the development of professional competencies through the Professional Development Programme.
• Ensure students have an awareness of the importance of safety in construction, the methodologies for addressing it and the legislative framework for its enforcement.
• Provide a thorough grounding in principles of sustainable Building Design, an understanding of approaches to minimise environmental impact, and the means of estimating such impacts.
• Offer an educational environment which satisfies academic requirements for Chartered Engineer status and Membership of The Chartered Institution of Building Services Engineers (CIBSE) and the Energy Institute (EI).
• provide an awareness of managerial issues within the built environment
• Establish the framework in which architectural engineers function, in collaboration with industrial partners.
• Enable suitably qualified students to undertake a period of study through an appropriate organisation in Europe, North America or Australia.

ASSESSMENT POLICIES

The assessment policy for courses on the Architectural Engineering Programme is to tailor the methods of assessment to the subject being taught and the nature of the classes so that understanding, knowledge and subject-specific skills are assessed using a variety of approaches. These include essays, reports, written examinations, practical exercises, presentations, group and individual projects and the dissertation. What is best for each module is moderated by seeking a balance of modes within terms and stages.

Formal assessment in courses teaching subject specific understanding, knowledge and skills is by either coursework or unseen written examinations but there are some courses which are assessed by both. The examinations are summative while coursework may be used to assess understanding and subject specific skills on a formative or summative basis. Continuous assessment is more common in courses explicitly designed to develop cognitive and core skills, and professional awareness. This approach to assessment enables staff and students to monitor the establishment and honing of transferable skills in practical exercises that are directly applicable to the built environment.

The methods of assessment adopted are continually reviewed. Specific details about assessment methods are provided in the appropriate course descriptor.
Whilst studying abroad, students follow the assessment criteria of the host University. The exchange agreement with the host University dictates that assessment is a combination of coursework and assessment by formal examination. Samples of assessment whilst abroad are retained in the SBE on-campus stage 4 archive for future scrutiny and quality purposes.

### PROGRAMME STRUCTURE

#### Mandatory Courses

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<tr>
<th>Edinburgh SBC</th>
<th>Orkney</th>
<th>Dubai</th>
<th>HWUM</th>
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### D1E1-AEI Master of Engineering in Architectural Engineering with International Studies

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<th>SCQF Cr</th>
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#### Optional Courses

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<th>SCQF Lvl</th>
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<td>SBC</td>
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<td>Surveying and Monitoring in the Built and Natural Environment</td>
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### ELECTIVES (UG)

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### COMPOSITION AND STAGE NOTES (UG)

**Stage 1**

8 taught courses - 8 mandatory

There will be a 3-4 day UK residential fieldtrip in this Stage. Architectural Engineering students who wish to change to another programme within the discipline can do so at the end of Stage 1

**Mandatory Credits 1** 120

**Optional Credits 1**
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<table>
<thead>
<tr>
<th>Elective Credits 1</th>
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<tbody>
<tr>
<td>Total 1</td>
<td>120</td>
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</table>

**Stage 2**

8 taught courses - 7 mandatory and 1 optional

Architectural Engineering students who wish to change to another programme within the discipline can do so at the end of Stage 2.

| Mandatory Credits 2 | 105 |
| Optional Credits 2  | 15  |
| Elective Credits 2  |     |
| Total 2             | 120 |

**Stage 3**

8 taught courses - 8 mandatory

There will be a 5 to 7 day overseas residential fieldtrip in this Stage. All Stage 3 courses, at SCQF levels 8 and 9, run by the School of the Energy, Geoscience, Infrastructure and Society are qualifying courses for the BSc and BEng degrees

| Mandatory Credits 3 | 120 |
| Optional Credits 3  |     |
| Elective Credits 3  |     |
| Total 3             | 120 |

**Stage 4**

Students study abroad with one of our recognised partners.

Students follow a programme broadly similar to Stage 4 in Edinburgh, with at least 30 credits worth of work attributed to design work and 90 credits worth of work attributed to technical subjects.

| Mandatory Credits 4 | 120 |
| Optional Credits 4  |     |
| Elective Credits 4  |     |
| Total 4             | 120 |

**Stage 5**

7 taught courses - 7 mandatory (1 x 30 credit course)

All Stage 5 courses are qualifying courses. Students do their dissertation in Stage 5.

| Mandatory Credits 5 | 120 |
| Optional Credits 5  |     |
| Elective Credits 5  |     |
| Total 5             | 120 |

**ASSESSMENT AND PROGRESSION (UG)**

**Reassessment Opportunities**

1. A student who has been awarded a Grade E or a Grade F in a course may be re-assessed in that course.
2. A student shall be permitted only one re-assessment opportunity to be taken at the Resit diet of examination following
Part A. The minimum number of credits required to progress through each stage are as follows

Stage 1 to 2: Requires 120 SCQF credits including a minimum of 120 credits at Level 7
Stage 2 to 3: Requires 240 SCQF credits including a minimum of 90 credits at Level 8
Stage 3 to 4: Requires 360 SCQF credits including a minimum of 60 credits at Level 9
Stage 4 to 5: Requires 480 SCQF credits including a minimum of 90 at Level 9 and 180 at Levels 9 and 10

Part B. The minimum grade of D is required in the following courses

Stage 1: A minimum of 6 C grades and a minimum D grade in Mathematics A and B (F17SP, F17SQ)
Stage 2: A minimum of 6 C grades
Stage 3: All courses at D grade in Stage 3
Stage 4: N/A

AWARDS, CREDITS AND LEVEL (UG)

Part A. Credit Requirements

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<thead>
<tr>
<th>Overall Credits</th>
<th>Specific Requirements</th>
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<tr>
<td>Integrated Masters</td>
<td>600 SCQF credits including a minimum of 90 credit at Level 11</td>
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<tr>
<td>Honours Degree (inc.MA)</td>
<td>480 SCQF credits including a minimum of 180 credit at Level 9 and 10 of which at least 90 credits at Level 10</td>
</tr>
<tr>
<td>Ordinary or General Degree</td>
<td>360 SCQF credits including a minimum of 60 credit at Level 9</td>
</tr>
<tr>
<td>Diploma of Higher Education</td>
<td>240 SCQF credits including a minimum of 90 credit at Level 8</td>
</tr>
<tr>
<td>Certificate of Higher Education</td>
<td>120 SCQF credits including a minimum of 90 credit at Level 7</td>
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</table>

Part B. Mark/Grade Requirements

<table>
<thead>
<tr>
<th>Overall Mark</th>
<th>Overall Grade</th>
<th>Basis of Overall Mark/Grade</th>
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<tr>
<td>Integrated Masters</td>
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</tr>
<tr>
<td>Honours Degree (inc.MA)</td>
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<td>Ordinary or General Degree</td>
<td>&gt;=40%</td>
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<td>Diploma of Higher Education</td>
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<tr>
<td>Certificate of Higher Education</td>
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DURATION OF STUDY

IN MONTHS | Full-time
## D1E1-AEI Master of Engineering in Architectural Engineering with International Studies

<table>
<thead>
<tr>
<th>Degree Type</th>
<th>Points</th>
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