

CertHE Building Services Engineering

Programme Specification 2026– 2027

Version: 1.00

Status: Final

Date: 25/03/2026

Summary Programme Details

Final Award

Award: Certificate of Higher Education (CertHE)
Title of (final) Programme: Building Services Engineering
Credit points: 120
Level of award: 4

Intermediate award(s)*

N/A

Apprenticeship Standard and Assessment Plan (relevant to apprentices only)

Name of apprenticeship standard: Building Services Engineering Senior Technician
Reference number: ST0041
End Point Assessment: Yes
End Point Assessment Organisation: Chartered Institution of Building Services Engineers (CIBSE)
Link to apprenticeship standard:
<https://www.instituteforapprenticeships.org/apprenticeships/st0041-v1-4>
Link to assessment plan:
<https://skillsengland.education.gov.uk/apprenticeships/st0041-v1-4?view=epa>

Validation

Validating institution: University of the Built Environment
Date of last validation: TBC
Date of next periodic review: TBC
Date of commencement of first delivery: Autumn 2026
Duration: CertHE route 18 months or apprenticeship route 22 months (including 4 months for EPA)
Maximum period of registration: In accordance with the [Academic and Programme Regulations \(opens new window\)](#).
UCAS Code/ HECoS Code: TBC
Programming Code: TBC
Other coding as required: TBC

Professional accreditation / recognition

Accrediting/recognising body: **Chartered Association of Building Engineers** (currently seeking accreditation)
Details of the accreditation/recognition: Accreditation with the Chartered Association of Building Engineers for Engineering Council recognition of EngTech status is being sought as part of programme development.
Date of last programme accreditation/recognition: N/A

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Date of next periodic review: TBC

Accrediting/recognising body: **Joint Board of Moderators** (currently seeking accreditation)

Details of the accreditation/recognition: Accreditation with the Joint Board of Moderators for Engineering Council recognition of EngTech status is being sought as part of programme development.

Date of last programme accreditation/recognition: N/A

Date of next periodic review: TBC

QAA Guidance

[UK Quality Code for Higher Education \(opens new window\)](#)

[QAA Credit Framework for England \(opens new window\)](#)

[Quality Assurance Agency Subject Benchmark Statement \(SBS\): Engineering, March 2023 \(opens new window\)](#)

OfS Standards

[Office for Students \(OfS\) Sector Recognised Standards \(opens new window\)](#)

Programme Overview

Rationale

This programme provides students with a rigorous understanding of the principles and practice involved in the discipline of building services engineering, up to Certificate of Higher Education Level 4.

The academic programme is based on the requirements of the Building Services Engineering Senior Technician Level 4-degree apprenticeship. The programme is designed for people both interested in, or already involved via employment, in the technical services that enable all structures in the built environment to serve the purpose for which they were intended. These services include the supply of electricity, gas, water, heating and cooling, amongst others. Without the infrastructure and plant to maintain our built environment, the materials used in these structures would deteriorate, and the people using them would live and work in a less-than-optimal environment.

The learning suits those who wish to further their career to fulfil a role equivalent to Senior Technician in building services engineering, become recognised by CIBSE (the main Professional Statutory Regulatory Body (PSRB) for the area) as an EngTech licentiate, and enabling the potential for progress to IEng and ultimately CEng as a career path.

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The programme can:

- further the student's career in building services engineering;
- satisfy the academic requirements for EngTech membership;
- provide learning from the largest provider of qualified built environment professionals to the industry, with an outstanding reputation; and
- strengthen the student's skills in building services engineering.

Entry Requirements

Students are required to be **18 years or over** at the start of their programme.

All entrants to this programme must **be in suitable employment**.*

Entrants to this programme are normally required to have:

- obtained 64 UCAS tariff points or an equivalent level of attainment through recognised qualifications not included in the UCAS tariff; **

Or

- completed an Advanced Apprenticeship in Surveying*** or an Advanced Apprenticeship in Construction Technical*** through which a Construction and Built Environment Diploma with a minimum DD profile was obtained or through which a Construction and Built Environment Extended Diploma with a minimum MMM profile was obtained, or an equivalent qualification;

And

- GCSE Grade 4 (or C) or above in English and Mathematics or an equivalent Level 2 qualification in English and Mathematics as defined by the Regulated Qualifications Framework (RQF) in England. ****

Applicants to the apprenticeship programme must also:

- meet all of the funding eligibility requirements contained in the [DfE funding rules](#).

And

- have the right to work in England, meet Department for Education (DfE) residency status requirements, spend at least 50% of their working hours in England and be directly employed in a job role that will enable the requirements of the apprenticeship to be achieved.

Additional pre-enrolment information, study skills guidance, and induction activities will be provided to support CertHE students in transitioning into higher education study.

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*Relevant employment is employment in a job role that will support the applicant in developing the required skills, knowledge, behaviours and experience required to complete a Certificate of Higher Education in Building Services Engineering.

**Recognised qualifications having an equivalent level of attainment as those recognised by UCAS include: Higher National Certificate (HNC), Higher National Diploma (HND), professional qualifications from recognised institutions, certain armed forces qualifications and partially completed degrees. There are also a wide range of international qualifications that are deemed to have UCAS point equivalent values. For more information on equivalent qualifications please contact: admissions@ube.ac.uk.

*** Completion of this apprenticeship will need to be evidenced through a verified copy of the apprenticeship completion certificate as issued by the apprenticeship certification body.

**** Equivalent level 2 qualifications in English and Mathematics under the RQF framework for England can be found within the [Government Education website \(opens new window\)](#).

The academic level of international qualifications that are not listed on the UCAS tariff will be assessed using UK ENIC.

If an applicant does not meet the standard entry requirements, including being in suitable employment, the University will consider the application on an individual basis. In these cases, the application will be assessed by the Programme Leader or for students in Hong Kong by the Dean (Academic Portfolio and International), who will give careful consideration to any professional and life experiences as well as any academic or vocational qualifications the applicant may hold. The applicant may be asked to provide a detailed personal statement and/or a reference or letter of support from an employer or mentor to support the application. Applications are assessed in accordance with the University of the Built Environment [Admissions and Recognition of Prior Learning Policy \(opens new window\)](#).

Apprenticeship programme

Applicants to the apprenticeship programme must also have the right to work in England, meet Department for Education (DfE) residency status requirements, spend at least 50% of their working hours in England and be directly employed in a job role that will enable the requirements of the apprenticeship to be achieved. Applicants to the apprenticeship programme must meet all of the funding eligibility requirements contained in the [DfE funding rules \(opens new window\)](#).

English language requirements

All University of the Built Environment programmes are taught and assessed in English. In addition to the programme entry requirements listed above, all

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applicants will therefore be required to demonstrate adequate proficiency in the language before being admitted to a programme. Therefore, applicants must possess one of the following:

- GCSE Grade 4 (or C) or above in English Language or English Literature, or an equivalent qualification. For further information on equivalent qualifications please contact: admissions@ube.ac.uk.
- Grade 5.5 or above, with at least 5.5 in the reading and writing modules in the International English Language Testing System (IELTS) academic test administered by the British Council.
- 79 or above in the internet option, 213 or above in the computer-based option or 550 or above in the paper-based option, of the Teaching of English as a Foreign Language (TOEFL) test.
- Grade 4 (or C) or above in English (Language or Literature) at A/S Level.
- Holders of a cognate sub-degree (Level 5) qualification taught and assessed in English from the University of Hong Kong or City University of Hong Kong.
- HKDSE (Hong Kong Diploma of Secondary Education) Grade 3, or HKALE (Hong Kong Advanced Level Examination – Advanced Level & Advanced Supplementary Level) Grade E, or HKCEE (Hong Kong Certificate of Education Examination) Grade 3–5 or Grade A–D (Syllabus B only).

Applicants with a bachelor's degree that has been taught and examined in the English medium can be considered for entry in the absence of the qualifications detailed above if applying for a non-apprenticeship programme.

Technical Requirements

The specific hardware, graphics card, and operating system requirements for a Building Services Engineering course can vary based on academic level e.g., BSc, MSc, and the software and tools used in the curriculum which themselves can vary. For the purposes of a Level 4 CertHE, there are some general recommendations:

Hardware

Processor (CPU):

A multicore processor (e.g., Intel i-Series, Xeon, AMD Ryzen, Ryzen Threadripper PRO. 2.5GHz or Higher) for efficient handling of design and modelling tasks.

Memory (RAM):

8 –16 GB or higher for smooth multitasking and handling 3D modelling files.

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Storage:

Solid State Drive (SSD) with sufficient capacity for storing software, project files, and additional data. Note that Microsoft 365 is provided as standard to all UBE students, which includes access to OneDrive.

Display:

A high-resolution display with good colour accuracy for detailed model and simulations work.

Dedicated Graphics card (GPU), with VRAM:

A dedicated graphics card is important for 3D modelling and rendering tasks. NVIDIA GeForce or AMD Radeon series cards are often recommended. A DirectX 11 capable graphics card with Shader Model 5 and a minimum of 4GB of video memory (VRAM) will facilitate a more advanced level of graphics.

Operating System

Windows:

Most building services engineering software is compatible with Windows operating systems (64-bit Windows 11 recommended; Windows 10 has reached 'end of life', meaning no further support for security or other updates). Generally, Windows is the preferred operating system for this programme.

macOS:

For users on Mac systems, compatibility between macOS and programmes such as Autodesk Revit can be a challenge and will require you to either partition your desktop or purchase a license for a Virtual Desktop such as Parallels.

Linux:

Linux is used for many engineering applications, e.g., circuit design; however for ease of teaching and learning at UBE, Windows or optionally macOS with a virtual desktop is the recommendation.

Additional Considerations:

Mobile Devices:

Tablets like iPad Pro with stylus support may enhance digital sketching capabilities.

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Internet Connection:

A high-speed internet connection for software updates, online collaboration, and research.

Whilst costs attributed to computer specifications may be prohibitive to some students, University of the Built Environment is committed to ensuring that no student is digitally excluded. The University acknowledges that the majority of students will be employed in relevant engineering-related work, and as such will be enrolled on the premise that they have access to a suitable specification of workstation and internet connection as outlined above.

However, in specific circumstances where a student does not have access to a suitable computer and/or internet connection, the university will make every effort to accommodate that student on programme.

Software

The programme does not teach specific proprietary software packages as standalone technical training. However, students will be provided with appropriate guidance and contextual support to use relevant digital tools where required to complete learning activities and assessments.

Recognition of prior learning (RPL) or recognition of prior experiential learning (RPEL) routes into the programme

University of the Built Environment policy and procedures for Recognition of Prior Experiential Learning (RPEL) and Recognition of Prior Learning (RPL) are set out in the University of the Built Environment [Admissions and Recognition of Prior Learning Policy \(opens new window\)](#). This policy statement takes precedence in any such decision.

University of the Built Environment also recognises credit awarded by higher education degree awarding bodies in accordance with the relevant higher education qualifications framework and allows that credit to count towards module exemption from the programme.

Normally the maximum credit for prior learning that can be counted towards the programme is 66% (two thirds). RPL does not enable the transfer of credit/exemption from classification modules.

Programme Progression

For details of progression arrangements, please view the [Academic and Programme Regulations \(opens new window\)](#).

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Level 4 Building Services Engineering as a Technician Pathway

Our Level 4 programme (equivalent to an HNC) is designed to build core skills in building services – such as designing and maintaining electrical power, lighting, fire alarms and control systems. It aligns directly to the Building Services Engineering Senior Technician occupational standard, preparing students for hands-on roles where they support engineers and architects by producing technical drawings, checking installations, and solving on-site problems. In this sense, it offers a pathway similar to architectural technologist in architecture – practical and technically focused, but distinct from the broader design and system integration role of a professional engineer.

The Level 4 programme can act as a stepping stone to further study, i.e., a top-up BSc (Hons) in Building Services Engineering. Some students may choose to progress to Level 6 study, but this would typically require academic bridging and further development of theoretical knowledge and critical thinking. The current programme is aimed at preparing competent and industry-ready technicians, not engineering graduates.

We therefore position our Level 4 programme as a technician route, serving a different function from the dedicated engineering pathway. Just as architects and architectural technologists play complementary but distinct roles, so too do engineers and building services technicians. We will continue engaging with our Employers Forum to explore industry views on progression routes and ensure that any future degree-level provision builds on a clear understanding of this distinction.

Award Regulations

For details of award arrangements, please view the [Academic and Programme Regulations \(opens new window\)](#).

Career Prospects

Building services engineers are responsible for ensuring the safe and reliable operation of services within buildings. There are several fields within which a building services engineer may be working:

- electrical engineering;
- façade engineering;
- heating, ventilating, refrigeration and air conditioning;
- lighting;
- mechanical engineering;
- public health; or

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- sustainable and renewable energy.

Students on the programme can look to enhance their career within the following types of organisations:

- consultancies, providing services such as building services design, sustainable energy systems, installation inspections, specification and cost control to a variety of client companies.
- multidisciplinary construction companies, requiring specialist design and planning skills for a range of projects.
- major house building companies, advising on energy efficiency in design.
- universities and other educational institutions, requiring ongoing building systems support and maintenance in addition to occasional customised design work.
- local authorities, requiring systems maintenance and design support across a range of facilities.
- the public health and healthcare sectors, including hospitals and care homes.

Programme Aims

Programme aims

The programme aims to provide students with a thorough understanding of the principles and practices of building services engineering, up to Certificate of Higher Education Level 4.

The programme reflects the academic underpinning necessary to prepare students for a career as a Building Services Engineering Senior Technician, with the option to further their higher education to undergraduate degree and ultimately master's degree level.

Some of the main duties of a Building Services Engineering Senior Technician consist of:

- supervision of the installation of environmental technologies into buildings;
- assisting design teams with building services engineering solutions on construction projects;
- supervision of specialist contractors;
- control of health and safety on construction projects;
- recording, control and reporting of progress on a construction project;
- minimisation of the environmental impact of construction projects;

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- control the quality of works on a construction project; and
- ensure compliance with contractual conditions on a project.

For apprenticeship students the programme includes an End Point Assessment (EPA) which is the culmination of the Building Services Engineering Senior Technician Level 4 Apprenticeship Programme.

Market and internationalisation

This programme is aimed at UK students who are in employment.

Programme Structure

Module List

Code	Module	Level	Credits	Core/Elective
BSE4BSF	Building Services Fundamentals and Environmental Performance	4	20	Core
BSE4MPH	Mechanical and Public Health Engineering	4	20	Core
BSE4EBS	Electrical Building Services and Controls	4	20	Core
BSE4FEN	Fire Engineering	4	20	Core
BSE4SIU	Systems Integration and Utility Coordination	4	20	Core
BSE4PPR	Professional Practice, Regulation and Industry Trends	4	20	Core

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Notes

Credits are part of the Credit Accumulation and Transfer System (CATS). Two UK credits are equivalent to one European Credit Transfer System (ECTS) credit.

Students entering with exemptions may see a change to their study route.

Learning Outcomes

Having successfully completed the programme, the student will have met the following learning outcomes.

Level 4

A – Knowledge and understanding

Learning Outcomes	Relevant modules
A4.1. Explain fundamental scientific and engineering principles that underpin well-defined building services engineering problems	BSE4BSF BSE4MPH BSE4EBS
A4.2. Outline the techniques and procedures used in the design, installation, commissioning, maintenance and operation of building services engineering systems	BSE4BSF BSE4MPH BSE4EBS BSE4FEN BSE4SIU
A4.3. Describe the properties of common materials and components used in building services engineering and the criteria for their selection	BSE4BSF BSE4MPH
A4.4. Explain basic design principles and control processes in building services engineering, considering common constraints such as regulatory requirements and technical limitations	BSE4EBS BSE4SIU
A4.5. Outline the industry standards, codes of practice and building regulations (including relevant building safety legislation) that govern building services engineering projects	BSE4FEN BSE4PPR
A4.6. Explain the principles of sustainable development and how they impact the design, operation and lifecycle of building services engineering solutions	BSE4BSF BSE4PPR

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Learning Outcomes	Relevant modules
A4.7. Describe key project management techniques in a building services context, including approaches to quality assurance, information management and continuous improvement processes	BSE4SIU BSE4PPR
A4.8. Explain methods for planning and resourcing building services engineering tasks, considering their effects on cost, quality, safety, security and the environment	BSE4SIU BSE4PPR

B – Intellectual skills

Learning Outcomes	Relevant modules
B4.1. Use mathematical, statistical and analytical methods to solve well-defined building services engineering problems	BSE4BSF BSE4MPH BSE4EBS
B4.2. Collect and interpret technical data to support the analysis of building services engineering problems	BSE4BSF BSE4MPH BSE4EBS
B4.3. Identify risks associated with building services engineering activities and outline appropriate mitigation measures	BSE4FEN BSE4PPR

C – Subject practical skills

Learning Outcomes	Relevant modules
C4.1. Interpret and produce technical drawings and models using appropriate computer software for building services engineering applications	BSE4MPH BSE4EBS BSE4SIU
C4.2. Explain the uses and limitations of digital modelling techniques, including Building Information Modelling (BIM), in building services engineering	BSE4SIU
C4.3. Apply relevant health, safety and welfare regulations (e.g. CDM) when planning and performing building services engineering work	BSE4FEN BSE4PPR

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D – Key / Transferable skills

Learning Outcomes	Relevant modules
D4.1. Plan and manage own learning and continuing professional development (CPD) to maintain and improve technical competence	BSE4PPR
D4.2. Communicate technical information effectively using appropriate methods, media and engineering terminology	BSE4BSF BSE4PPR
D4.3. Work effectively both independently and as part of a team, understanding one’s role, responsibilities and limits of authority, and how to interact with colleagues, clients and other stakeholders	BSE4PPR
D4.4. Demonstrate awareness of ethical principles and of equality, diversity and inclusion in engineering practice, including the need for secure and responsible handling of data	BSE4BSF BSE4MPH BSE4EBS BSE4FEN BSE4SIU BSE4PPR

The programme Learning Outcomes have been developed by mapping the Knowledge, Skills, and Behaviours (KSBs) from the [apprenticeship standard \(opens new window\)](#). This process ensures that each Learning Outcome reflects a coherent combination of technical knowledge, practical ability, and professional behaviours required for industry practice and progression toward Engineering Council registration at EngTech level.

Delivery Structure

Autumn (UK) Entry

Year 1, Semester 1

Module Code	Module Name	Level
BSE4BSF	Building Services Fundamentals and Environmental Performance	4
BSE4MPH	Mechanical and Public Health Engineering	4

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Year 1, Semester 2

Module Code	Module Name	Level
BSE4EBS	Electrical Building Services and Controls	4
BSE4FEN	Fire Engineering	4

Year 2, Semester 1

Module Code	Module Name	Level
BSE4SIU	Systems Integration and Utility Coordination	4
BSE4PPR	Professional Practice, Regulation and Industry Trends	4

Spring (UK) Entry

Year 1, Semester 1

Module Code	Module Name	Level
BSE4BSF	Building Services Fundamentals and Environmental Performance	4
BSE4MPH	Mechanical and Public Health Engineering	4

Year 1, Semester 2

Module Code	Module Name	Level
BSE4SIU	Systems Integration and Utility Coordination	4
BSE4PPR	Professional Practice, Regulation and Industry Trends	4

Year 2, Semester 1

Module Code	Module Name	Level
BSE4EBS	Electrical Building Services and Controls	4
BSE4FEN	Fire Engineering	4

Module Summaries

Core Modules

BSE4BSF Building Services Fundamentals and Environmental Performance

This module introduces the core principles and professional context of building services engineering while exploring the environmental design criteria that underpin occupant comfort and system efficiency. Students will examine thermal comfort, lighting, air quality, acoustics, and how the building fabric influences performance. Systems for mechanical, electrical, and public health services are introduced, alongside basic numerical methods for quantifying comfort and energy-related variables (e.g., temperature, illuminance, airflow, heat gains, U-

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values, lux levels). The importance of integrated design, health and safety, and industry standards is emphasised, with students also learning to interpret and evaluate building services drawings. By the end of this module, students will understand how environmental design and system performance combine to deliver safe, sustainable, and high-quality internal environments.

BSE4MPH Mechanical and Public Health Engineering

This module introduces the design and application of mechanical and public health systems within buildings. It covers the principles of LTHW heating systems, ventilation strategies, and domestic water services, alongside drainage and gas installations. Students will explore low-carbon technologies, pipe and system sizing, and safety considerations in piped systems design. Mathematical skills are developed through pressure loss calculations, pipe sizing formulas, and flow rate analysis. Emphasis is placed on compliance, sustainability, and the contribution of these systems to overall building performance and occupant wellbeing.

BSE4EBS Electrical Building Services and Controls

This module provides a comprehensive overview of electrical systems and associated control technologies used in buildings. Key topics include low-voltage electrical distribution, standby power systems, lighting design, fire detection interfaces, and ICT infrastructure. Students will explore the principles of electrical safety, including earthing and bonding, and gain an understanding of building management systems (BMS) and the integration of control strategies. The module includes fundamental calculations for electrical load estimation, cable sizing, and power demand assessment. It also introduces regulatory frameworks such as BS 7671, with emphasis on coordinating electrical systems alongside mechanical and public health services in multi-service environments.

BSE4FEN Fire Engineering

This module focuses on the role of building services in supporting fire safety and resilience. It explores the principles of fire dynamics, regulatory frameworks, and the integration of fire safety measures into building design. Topics include fire detection and alarm systems, smoke control and extraction, active suppression technologies (sprinklers, misting, gaseous systems), and passive protection strategies. Students will examine means of escape design, evacuation modelling, and the coordination of fire systems with wider MEP services. Practical case studies will highlight the interaction between regulatory compliance, health and safety, and the protection of life, property, and business continuity.

BSE4SIU Systems Integration and Utility Coordination

This project-based module enables students to apply knowledge from earlier modules in a practical context. It explores the coordination of mechanical,

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electrical, fire, and public health systems using BIM and spatial planning tools. Topics include utility intake planning, service zone design, interdisciplinary collaboration, and installation sequencing. Applied numeracy is embedded through scale interpretation, coordination of service zones, and spatial analysis for clash detection. The module culminates in a project task, requiring students to produce integrated service layouts and a utility interface strategy for a real or simulated building.

BSE4PPR Professional Practice, Regulation and Industry Trends

This module supports students in developing professional awareness, regulatory understanding, and readiness for industry challenges. It introduces the role of engineers in multidisciplinary teams, the legal and ethical standards of professional practice, and current trends such as digitalisation, smart buildings, and decarbonisation. Health and safety, equality, and inclusion are explored alongside preparation for professional registration and the End Point Assessment process. While not heavily maths-focused, this module reinforces numeracy by supporting the interpretation of data, performance metrics, and regulatory thresholds.

University of the Built Environment Competence Standards

All undergraduate and postgraduate students are expected to meet the basic academic competencies laid out in the admissions criteria for their degree programme. Additionally, University of the Built Environment students are expected to meet the following competency standards:

1. **Competence Standard:** The ability to work independently and/or as part of a team, for the purposes of research, collective problem solving and communication of results/findings.

Justification: Professionals in the built environment are required to work with a variety of stake holders to achieve joint and individual targets. University of the Built Environment graduates should be capable in both settings

2. **Competence Standard:** The ability to exercise self-learning and use acquired theoretical and practical knowledge.

Justification: Students in higher education are required to engage in self-directed learning to achieve learning outcomes. Support is available from University of the Built Environment to acquire these skills.

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3. **Competence Standard:** The ability to effectively present key facts, ideas, problem solutions, results etc. using verbal, expressive, and/or written communication.

Justification: Professionals within the built environment sector are required to present information to colleagues, clients, and other stakeholders in a variety of formats. University of the Built Environment graduates should be able to display these skills.

4. **Competence Standard:** The ability to submit work within agreed time frames.

Justification: Working to deadlines is a key requirement of professionals in the built environment. University of the Built Environment courses have a maximum period of registration that must align with accrediting PSRBs.

5. **Competence Standard:** The ability to use digital resources as an aid to research, analysis, problem solving and presentation.

Justification: University of the Built Environment's delivery method is entirely online with no physical campus. Support is available to assist with use of digital resources.

6. **Competence Standard:** The ability of learners to express and develop ideas using digital literacy in English.

Justification: University of the Built Environment is an online institution based in the UK. Students must have the ability to communicate in English through University of the Built Environment's online platforms.

7. **Competence:** The ability to critically interpret qualitative and/or quantitative data

Justification: Built environment professionals are required to handle both qualitative and quantitative data. University of the Built Environment's assessments also require critical interpretation; support is available to develop these skills.

8. **Competence:** Knowledge of the general principles and practices of professional codes of conduct.

Justification: University of the Built Environment courses are accredited by RICS, CIOB and CABE. Students seeking professional accreditation are also advised to consult the relevant PSRB which identifies key competencies for various levels of professional competence.

Learning, Teaching and Assessment

Learning and Teaching

Knowledge and understanding

The teaching, learning and assessment strategy for the programme is guided by the University-wide Learning, Teaching and Assessment Strategy (LTAS 2020–2025). The approach adopted is student-centred learning design, that supports the educational needs of our diverse student community. Learning has been designed with flexibility in mind to support students to adopt their own learning experience best suited to their needs.

Students are taught through online learning resources available to them, including customised text material, study papers, learning activities and interactive media. These are complemented by a variety of Lecturer-facilitated sessions and interactions, using a range of media for enhancement of the learning experience.

Students are encouraged to research beyond the material provided and undertake self-directed learning throughout their programme.

Intellectual skills

Learning and teaching methods are applied to enable the development of cognitive skills. These skills are aligned to those used by Building Services Engineers, but also meet the needs of working in other industries. These skills are developed through interaction with multi-media learning resources, self-directed learning and via participation in student-centred learning activities. The approach to assessment is lecturer-guided and formative feedback on these skills is given appropriate emphasis.

Students are encouraged to develop and apply their knowledge and understanding through a range of online activities and exercises. These require students to apply research and analysis to industry issues.

Subject practical skills

The programme equips students with a broad set of applied, technician-level practical skills, tailored to the role of the Building Services Engineering Technician. These are distinct from the craft or trade skills of installation apprenticeships and instead focus on digital, analytical, and evaluative competencies required in professional practice.

For example, students will develop the ability to use specialist software tools such as Trimble ProDesign, H2X, and MagiCAD for cable sizing, HVAC design, and

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coordination of building services systems. Practical water testing and analysis is introduced through sampling activities, where results such as pH, hardness, conductivity, and Legionella risk are interpreted and reported. Students will also gain competence in reading and appraising record information, including service drawings, commissioning reports, electrical condition reports, and trend data from Building Management Systems.

In addition, apprentices will practice obtaining and interpreting publicly available information such as utility service records via platforms like 'LinesearchbeforeUdig,' developing risk awareness and coordination skills. Activities also include conducting surveys and observational walkthroughs, tagging and identifying plant items in 360° virtual plant rooms, and analysing system performance data to make recommendations.

These skills are embedded across modules: Building Services Fundamentals and Environmental Performance (BSE4BSF) introduces comfort criteria and the appraisal of building data; Mechanical and Public Health Engineering (BSE4MPH) and Electrical Building Services and Controls (BSE4EBS) cover system-specific analysis, software modelling, and testing; Fire Engineering (BSE4FEN) addresses the interpretation of regulatory and performance data; Systems Integration and Utility Coordination (BSE4SIU) emphasises digital collaboration, record analysis, and utility mapping; while Professional Practice, Regulation and Industry Trends (BSE4PPR) situates these skills in the wider context of compliance, ethics, and industry expectations.

Together, these modules provide a coherent and practice-aligned set of practical skills that prepare apprentices for the realities of modern building services engineering.

Key/Transferable skills

The BE Ready Orientation sets out the importance of transferable skills. These skills are developed through the programme, utilising study, and assessment. This can be via virtual learning environment (VLE) discussion, tuition discussion, problem-solving exercises, which are conducted individually or in groups, and coursework, which provides the ideal combination to internalise these aspects through different learning methods. The Study Skills area of the VLE is a further resource for support in developing these skills.

Assessment

The assessment strategy for the programme is guided by the University of the Built Environment-wide Learning, Teaching and Assessment Strategy (LTAS 2020-2025). The aim of University of the Built Environment's assessments is to allow students an opportunity to demonstrate what they have learned using a range of formats and which encourage critical self-reflection linked to personal

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development. To support this, assessments are clearly related to module learning outcomes and the activities within the module support students in achieving these.

University of the Built Environment's practice is to require assessments to be vocationally and professionally relevant. Assessments are built that have direct application to industry standards, and that enable students to learn through real world scenarios and working practice. This involves the generation of tasks based on problems, scenarios or case studies from recent real-world situations that reflect and/or replicate the vocational requirements of the industry and the international nature of the subject matter. All elements of assessments are discipline-specific for each programme as well as supporting the acquisition and promotion of transferable skills, including research skills development.

Formative assessment and feedback opportunities are provided throughout the programme in a variety of formats to motivate, guide and develop students through their learning. Students are required to complete various pieces of coursework in the modules which are assessed within set time frames. Detailed feedback is provided on lecturer-assessed work, which explains how the mark was derived, what was done well and what could be improved for future assessments. Objective testing is also utilised in formative (including self-assessment) and summative assessment.

All assessment contributing to award is subject to moderation policies. Moderation at University of the Built Environment is designed to reflect the quality of the student submission and the benchmark standards for the various levels of undergraduate study. Moderation of marking accords with QAA recommended best practice to ensure that marking criteria have been fairly, accurately, and consistently applied during first marking.

Assessment Diet

The types of assessments used on this programme will include coursework (such as essays, reports, reflections, problem questions or presentations), computer-based assessments (CBAs), portfolio, practical and project assessments. The exact combinations of assessment will vary from module to module; please refer to the module descriptors for more information.

Study Support

BE Ready Orientation

The purpose of BE Ready is to prepare students for online learning with the University but also to support students throughout their learning journey. Students

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are expected to visit BE Ready every semester for updates, welcome back week activities as well as advice specific to their level of study.

There are a variety of resources which will help students to get started. These include how to use the VLE, how to navigate a module, the University e-library and how to join a webinar. BE Ready also provides practical advice such as how to manage independent study, where to find our Study Skills resources and how to access academic or pastoral support. All this information is key to having a successful start to supported online learning with the University of the Built Environment.

Resources are available to support students with referencing and how to develop good academic practice to avoid academic misconduct. A range of study skills support materials are available to apprentices.

Student learning support

The programme is taught via the University of the Built Environment's VLE and academic facilitation and support is provided online giving student's access to the University Lecturers and other students worldwide.

The Education team will guide and support students' learning. Furthermore, all students who do not engage with initial assessment or the VLE will receive additional support from the Programme Team. Other the University administrative teams provide support for assessments and technical issues including ICT. University of the Built Environment's VLE provides the main point of contact for students for these teams throughout the duration of their programme.

Each student, wherever their location, will have access to a wealth of library and online materials to support their studies. International students are able to use their local context when writing their assessments.

The Academic Support and Enhancement (ASET) team works with departments to promote student retention, achievement and success. This work is achieved through a multi-faceted approach, which consists of:

- delivering support tutorials to students identified as academically at risk to develop the academic skills needed for success;
- developing 'self-serve' support resources to enable students to develop their academic skills;
- delivering teaching webinars and drop-in sessions on academic skills;
- working with the Education team and other support teams to identify ways in which student success can be further facilitated.

Relevant research is also carried out to inform proactive interventions, and to develop policy and practice.

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Disability, neurodiversity, and wellbeing related support is provided via a dedicated Disability and Welfare team at University of the Built Environment.

Workplace apprenticeship support and apprenticeship support from the University

Apprentices are supported throughout the programme to ensure they remain engaged and progress to achieve a successful outcome. Each apprentice is allocated an Apprenticeship Outcomes Officer (AOO) who acts as the main point of contact for both the apprentice and line manager for the duration of the apprenticeship. The AOO provides guidance and support, maintains regular contact via email and telephone and monitors their journey to the end point assessment.

Progress is monitored through 12 weekly online progress reviews, which involve the apprentice, the employer, and the AOO. These tripartite meetings provide an opportunity to review progress, set targets, and address any support needs. The apprentice and employer lead the discussion, with the AOO facilitating the review, recording progress and agreeing targets/actions.

Apprentices are also supported with 1:1 sessions with the Technical Managers, providing additional opportunities to discuss learning and receive guidance.

In addition, apprentices are encouraged to engage with the wider learning community through online workshops (offered for some standards), CPD and networking events. Opportunities may also be provided through EPAO networking and events, as well as EPA preparation and group activities organised by some employers.

Apprentices may also take part as student representatives, contribute feedback on the apprenticeship programme, or act as mentors to newer apprentices, helping to strengthen peer support within cohorts.

Together, these structured reviews, regular contact with support staff, peer engagement opportunities and professional development activities ensure apprentices remain connected, supported and actively engaged throughout their apprenticeship.

English language support

For those students whose first language is not English, or those students who wish to develop their English language skills, additional support is provided through online resources on the VLE in the resource 'Developing Academic Writing'.

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The resource includes topics such as sentence structure, writing essays and guidance for writing aimed at developing students' study skills.

Personal and professional development

Students are undertaking vocational programmes that are intrinsically linked to the accrediting professional bodies. Students are encouraged and supported to understand the need for the recognition of these bodies and guided as to how to meet the professional membership requirements.

More generally, the University has a dedicated Careers Advisor to ensure students have appropriate access to careers education, information, advice and guidance.

Programme specific support

Each programme has a Programme Leader, as well as Module Leaders, Module Lecturers and Academic Support Tutors to support the students throughout their time with the Programme.

The University of the Built Environment staff are accessible during normal UK working hours, during which they also monitor the 24/7 forums asynchronously and provide encouragement, assistance and necessary tutor and student feedback services.

Access to the University of the Built Environment e-Library is on a 24/7 basis and the University has a full-time librarian during normal UK working hours.