

## PROGRAMME SPECIFICATION

---

### Bachelor of Science with Honours in Building Services Engineering

<b>Awarding institution</b>	LJMU
<b>Teaching institution</b>	International College of Business and Technology
<b>JACS Code</b>	
<b>Programme Duration</b>	Full-Time: 1 Year
<b>Language of Programme</b>	All LJMU programmes are delivered and assessed in English
<b>Subject benchmark statement</b>	Engineering (2015)
<b>Programme accredited by</b>	
<b>Description of accreditation</b>	
<b>Validated target and alternative exit awards</b>	Bachelor of Science with Honours in Building Services Engineering
<b>Link Tutor</b>	Alison Cotgrave

### Educational aims of the programme

The overall aim of the programme is to develop knowledge, understanding and intellectual and practical skills appropriate to a variety of roles within the Building Services Engineering sector. The intention is to provide a stimulating and challenging programme of study that accurately reflects the activities in the Building Services Engineering industry and prepares students for effective, productive and responsible employment in the sector.

The programme will offer the appropriate type and level of support as students build their knowledge, understanding and skills to become independent learners for the future.

Since the programme has a bias towards providing students with engineering skills and knowledge and the design of engineering services systems for buildings, it is suited to those employed in or seeking employment in the design and consultancy arm of the Building Services Engineering industry. To facilitate study for employed students the programme is offered in part-time as well as full-time attendance mode.

The specific aims of the programme are to provide:

1. A programme of study in Building Services Engineering which facilitates acquisition of the essential skills and knowledge of the subject supported by industry.
2. The appropriate learning experiences to enable students to develop their skills and attitudes as independent researchers and innovative problem solvers to the fullest potential in the Building Services Engineering Sector.
3. An awareness of existing and future issues in the construction and property industry and how they are likely to impinge on the role and function of the Building Services Engineer.
4. Opportunities for development of the student's interpersonal and communication skills, with special reference to aspects of Engineering, Technology, Design and Management.
5. Opportunities for development of the student's professional attitude commensurate with that of the practicing Building Services professional and to permit them to specialise in selected areas of Building Services Engineering.
6. Raised awareness of the responsibilities of the Building Services professional in relation to sustainability, energy efficiency and environmental issues within the built environment.
7. To ensure that successful graduates will have the potential to contribute to significant advances in engineering and technological issues associated with their chosen industry.
8. To provide students with appropriate learning experiences to enable them to develop their skills and attitudes as independent researchers and innovative and creative problem solvers to the fullest possible potential in the Building Services Engineering sector.
9. To prepare students for the transition from Higher Education to employment within a professional context; and

develop those transferable, specialist and employability skills that all stakeholders could reasonably expect of students who successfully complete a Building Services Engineering programme.

## Target award Learning Outcomes - Bachelor of Science with Honours

*A student successfully completing the programme of study will have acquired the following subject knowledge and understanding as well as skills and other attributes.*

*A student who is eligible for this award will be able to:*

1. Apply mathematical and scientific skills that are relevant to the various disciplines within the Building Services Engineering industry.
2. Apply the fundamental concepts, principles and theories of Building Services Engineering.
3. Apply appropriate legal, economic, design, environmental business and management techniques that are relevant to Building Services Engineers and other professionals working within the construction and building services industries.
4. Demonstrate a detailed knowledge and critical understanding of the essential facts, concepts, principles and theories relevant to the Building Services Engineering profession.
5. Apply technical solutions to complex design problems.
6. Demonstrate an understanding of the limits of their knowledge of their own specialist area together with other associated engineering fields and how this influences analysis and interpretations based on that knowledge.
7. Apply project management skills related to Building Services Engineering projects in the construction sector.
8. Apply the legal, economic, design, environmental, business and management techniques that are relevant to Building Services Engineers and other professionals working within the construction industry.
9. Identify and solve complex problems.
10. Critically evaluate the appropriateness of different approaches to solving problems.
11. Critically analyse and evaluate complex concepts and theories.
12. Critically analyse and integrate information and data from a variety of sources.
13. Use standard as well as specialist building services engineering, commercial or construction computational tools and packages effectively.
14. Prepare technical reports/drawings appropriate for a range of technical and non-technical purposes.
15. Make technical presentations to specialist and non-specialist audiences.
16. Use construction and building services engineering literature effectively.
17. Work as an effective member of a team.
18. Use information and communications technology effectively.
19. Manage resources and time effectively.
20. Manipulate and sort data.
21. Present data in a variety of ways.
22. Develop their own communication skills.
23. Demonstrate team-working and leadership skills.
24. Work effectively with others.

## Teaching, Learning and Assessment

*The methods used to enable outcomes to be achieved and demonstrated are as follows:*

The programme will be delivered using a mixture of lectures, tutorials, workshops, laboratory practical classes and design studio sessions. All aspects of the programme will seek to develop vocationally relevant skills and knowledge. Assessment will be carried out using a mixture of examinations and coursework; specifically assessments could consist of formal unseen examinations, in-class open book tests, online multiple choice tests, technical and/or research based written reports, and simulated design projects.

## Programme structure - programme rules and modules

The programme is offered in full-time mode.

Level 6	Potential Awards on completion	Bachelor of Science with Honours
Core	Option	Award Requirements
6500ICBTBS CONSTRUCTION SITE MANAGEMENT (20 credits) 6501ICBTBS ENVIRONMENTAL ANALYSIS (20 credits) 6502ICBTBS BUILDINGS, ENERGY AND SUSTAINABILITY (20 credits) 6504ICBTBS BUILDING ENGINEERING RESEARCH PROJECT (40 credits) 6505ICBTBS BUILDING SERVICES ENGINEERING PROJECT (20 credits)		120 core credits at level 6 0 option credits at level 6

## Information about assessment regulations

All programmes leading to LJMU awards operate within the University's Academic Framework.  
<https://www.ljmu.ac.uk/about-us/public-information/academic-quality-and-regulations/academic-framework>

## Opportunities for work-related learning ( location and nature of activities)

The modules and assessments have been carefully planned to mimic real projects that the student would encounter in the workplace.

## Criteria for admission

### Overseas qualifications

Higher National Diploma or Professional Diploma in Building Services Engineering as awarded by ICBT.

From 2021 from the Higher Diploma or Professional Diploma in Building Services Engineering awarded by LJMU.

Admission from other cognate qualifications, mapped against the home BSc (Hons) Building Services Engineering will be considered under the LJMU RPEL procedures.

## External Quality Benchmarks

All programmes leading to LJMU awards have been designed and approved in accordance with the UK Quality Code for Higher Education, including the Framework for Higher Education Qualifications in the UK (FHEQ) and subject benchmark statements where applicable.

The University is subject to periodic review of its quality and standards by the Quality Assurance Agency (QAA) Published review reports are available on the QAA website at [www.qaa.ac.uk](http://www.qaa.ac.uk)

Programmes which are professionally accredited are reviewed by professional, statutory and regulatory bodies (PSRBs) and such programmes must meet the competencies/standards of those PSRBs.

## Support for students and their learning

The University aims to provide students with access to appropriate and timely information, support and guidance to ensure that they are able to benefit fully from their time at LJMU. All students are assigned a Personal Tutor to provide academic support and when necessary signpost students to the appropriate University support services.

Students are able to access a range of professional services including:

- Advice on practical aspects of study and how to use these opportunities to support and enhance their personal and academic development. This includes support for placements and careers guidance.
- Student Advice and Wellbeing Services provide students with advice, support and information, particularly in the areas of: student funding and financial matters, disability, advice and support to international

students, study support, accommodation, health, wellbeing and counselling.

- Students studying for an LJMU award at a partner organisation will have access to local support services

## **Methods for evaluating and improving the quality and standards of teaching and learning**

### **Student Feedback and Evaluation**

The University uses the results of student feedback from internal and external student surveys (such as module evaluations, the NSS and PTES), module evaluation questionnaires and meetings with student representatives to improve the quality of programmes.

### **Staff development**

The quality of teaching is assured through staff review and staff development in learning, teaching and assessment.

### **Internal Review**

All programmes are reviewed annually and periodically, informed by a range of data and feedback, to ensure quality and standards of programmes and to make improvements to programmes.

### **External Examining**

External examiners are appointed to programmes to assess whether:

- the University is maintaining the threshold academic standards set for awards in accordance with the FHEQ and applicable subject benchmark statements
- the assessment process measures student achievement rigorously and fairly against the intended outcomes of the programme(s) and is conducted in line with University policies and regulations
- the academic standards are comparable with those in other UK higher education institutions of which external examiners have experience
- the achievement of students are comparable with those in other UK higher education institutions of which the external examiners have experience

and to provide informative comment and recommendations on:

- good practice and innovation relating to learning, teaching and assessment observed by external examiners
- opportunities to enhance the quality of the learning opportunities provided to students

### **Please note:**

*This specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. More detailed information on the learning outcomes, content, teaching, learning and assessment methods of each module can be found in module and programme guides.*