

PROGRAMME SPECIFICATION

Higher Diploma in Building Services Engineering

Awarding institution	Liverpool John Moores University
Teaching institution	ICBT, Colombo ICBT, Kandy
JACS Code	
Programme Duration	Part-Time: 2 Years
Language of Programme	All LJMU programmes are delivered and assessed in English
Subject benchmark statement	Engineering (2015)
Programme accredited by	
Description of accreditation	
Validated target and alternative exit awards	Higher Diploma in Building Services Engineering Certificate of Higher Education in Building Services Engineering
Link Tutor	Karl Jones

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 at levels 4 and 5. 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 and/or progression to level 6 studies.

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.

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. 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.
3. Opportunities for development of the student's interpersonal and communication skills, with special reference to aspects of Building Services Engineering, Technology, Design and Management.
4. Raised awareness of the responsibilities of the Building Services professional in relation to sustainability, energy efficiency and environmental issues within the built environment.
5. 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.

Alternative Exit/ Interim Award Learning Outcomes - Certificate of Higher Education

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

Demonstrate a knowledge of the underlying concepts and principles associated with Building Services Engineering, and an ability to evaluate and interpret these within that context.

Evaluate the appropriateness of different approaches to solving problems related to Building Services Engineering.

Communicate the results of their study accurately and reliably using structured and coherent arguments.

Demonstrate the qualities and transferable skills necessary for employment requiring the exercise of some personal responsibility.

Target award Learning Outcomes - Higher Diploma

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 problems.
6. Apply project management skills related to Building Services Engineering projects in the construction sector.
7. Apply appropriate Engineering solutions to real industrial needs.
8. Use standard as well as specialist building services engineering, commercial or construction computational tools and packages effectively.
9. Analyse surveys, reports, data, information and experimental results accurately.
10. Prepare technical reports/drawings appropriate for a range of technical and non-technical purposes.
11. Make technical presentations to specialist and non-specialist audiences.
12. Work as an effective member of a team.
13. Use appropriate mathematical methods for analysing Building Services Engineering problems.
14. Use industry best practice procurement and managerial techniques.
15. Apply appropriate economic and environmental principles to Building Services Engineering design.
16. Identify ways to improve their own learning.
17. Use information and communications technology effectively.
18. Manage resources and time effectively.
19. Transfer techniques and solutions from one field of engineering to another.
20. Manipulate and sort data.
21. Present data in a variety of ways.
22. 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 written reports and simulated design projects.

Programme structure - programme rules and modules

This programme will be studied on a part time basis. The schedule for the delivery of the modules will be determined by ICBT Campus and communicated to LJMU prior to students commencing on each stage of the programme.

Level 5	Potential Awards on completion	Higher Diploma
Core	Option	Award Requirements
5500ICBTBS BUILDING SERVICES II (20 credits) 5501ICBTBS FACILITIES MANAGEMENT (15 credits) 5502ICBTBS ENERGY MANAGEMENT (15 credits) 5503ICBTBS SUSTAINABLE BUILT ENVIRONMENT (10 credits) 5504ICBTBS BUILDING SERVICES III (15 credits) 5505ICBTBS BUILDING AUTOMATION (15 credits) 5506ICBTBS BUILDING MAINTENANCE (15 credits) 5507ICBTBS GROUP PROJECT (15 credits)		120 core credits at level 5 0 option credits at level 5
Level 4	Potential Awards on completion	
Core	Option	Award Requirements
4500ICBTBS CONSTRUCTION TECHNOLOGY (20 credits) 4501ICBTBS INTRODUCTION TO BUILDING SERVICES (10 credits) 4502ICBTBS MANAGEMENT STUDIES (10 credits) 4503ICBTBS ENGINEERING PRINCIPLES (20 credits) 4504ICBTBS BUILDING SERVICES I (15 credits) 4505ICBTBS BUILDING SERVICES DRAWING (CAD) (15 credits) 4506ICBTBS PROCUREMENT AND CONTRACTS (15 credits) 4507ICBTBS SCIENCE AND MATERIALS (15 credits)		120 core credits at level 4 0 option credits at level 4

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)

Modules and assessments have been carefully planned to mimic real projects that the student would encounter in the workplace wherever possible. As this is a part time programme, students will be apply knowledge attained in their employment to their academic studies.

Criteria for admission

Mature entry

In exceptional circumstances, candidates with non-standard qualifications, may qualify for entry to the course on the basis of considerable work experience in the construction industry.

Overseas qualifications

Completion of 13 years of formal education in Sri Lanka (or equivalent) and have studied A levels including at least one of which is Maths, Technology and/or a Science.

Ordinary level qualifications plus the successful completion of a NARIC approved Foundation programme in a Built Environment subject

A programme of study that is equivalent to a UK level 3 qualification.

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

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.