



Building Services Engineering

Course Guide 2021/2022

LEVEL 3, 4 & 5
APPRENTICESHIPS,
HIGHER EDUCATION &
PART-TIME

Leeds 
College of
Building_

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APPRENTICESHIP
2020
AWARDS
APPRENTICESHIP
PROVIDER
OF THE YEAR

Contents

College Open Events	02
Introduction	03
Level 3 BTEC Diploma	04
Level 4 Higher National Certificate	04
Level 5 Higher National Diploma	05
Apprenticeships	06
Higher Apprenticeships	08
CIBSE & Eng Tech	09
How to Apply	10
Information for Employers	10
General Enquiries	10
Competition Winners	11
Where to find us	12

Open Events

During the year we have several opportunities for you to attend the College to discuss your options directly with lecturers, enrol on the course and have a tour of our facilities. Upcoming dates are listed below. If you cannot make these dates, please contact us to make alternative arrangements to suit you.

Please note that some events are taking place remotely due to Covid-19 restrictions.

Visit www.lcb.ac.uk/events to find out if the event is taking place remotely or at one of our campuses, and to access the event registration forms.

Thursday	21	October 2021	5pm - 7pm	North Street
Saturday	20	November 2021	10am - 1pm	South Bank
Thursday	17	February 2022	5pm - 7pm	North Street
Saturday	21	May 2022	10am - 1pm	South Bank

Introduction

The Department of Higher Education, Construction Design & Management (HECDM)

The HECDM Team specialise in courses and technician apprenticeships in a variety of disciplines, including: Building Services Engineering, Civil Engineering and Construction & the Built Environment.

By working with our university partners, we can offer progression from level 2 through to level 6. We have a professional, experienced and enthusiastic teaching team who are committed to providing an excellent educational experience to ensure students reach their full potential.

For those students who are employed, we encourage employer involvement from the start so that academic studies at the College can be enhanced by the appropriate on the job experience. We are highly flexible and can adapt courses to suit the needs of an employer's business, from bespoke courses, specialist units and day or block release programs.

Our in-house Apprenticeship Team is available to support employers and apprentices, this includes help with the apprenticeship levy, recruitment providing support during an apprentices' training.

Building Service Engineering (BSE)

Building Services Engineering is about making buildings inhabitable, from lighting and acoustics, ventilation and refrigeration to energy supply and use. Building Services Engineers provide a healthy and safe environment for people to live, work and even study in.

At the College, courses are available from level 3 with progression up to level 5, and can be studied part-time or through the apprenticeship route.

We hope you find the information in this guide useful, if you have any questions about the courses you can contact the HECDM Team: **0113 222 6015** | hecm@lcb.ac.uk

Kind regards,

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Part-time Courses

Level 3 National Diploma (BSE)

The diploma is recommended as a starting point for students who are new or have limited experience in the industry. This will provide a very solid base to progress into higher education. The course is equivalent to two A Levels.

Entry requirements:

You will need either a Level 2 BTEC Diploma (including mathematics at merit or above) or a Level 3 NVQ Diploma in a Construction related area and/or 4 GCSEs at grade 9-4 (A*-C) in maths, English and science.

Course length:

2 years

Typical units include:

These are listed below, all units are subject to change and are provided as a guide.

- Unit 1:** Construction Principles (Mandatory)
- Unit 2:** Construction Design (Mandatory)
- Unit 4:** Construction Technology
- Unit 5:** Health and Safety in Construction
- Unit 12:** Low Temperature Hot Water Systems in Building Services
- Unit 14:** Provision of Primary Services in Construction
- Unit 21:** Building Services Science
- Unit 28:** Heating, Ventilation and Air Conditioning Design
- Unit 29:** Use of Static and Dynamic Fluids in Building Services Engineering
- Unit 31:** Electrical Principles in Building Services Engineering

Level 4 Higher National Certificate (BSE)

This course is aimed at students who have experience in the building services industry and a sound understanding of engineering principles. Your starting point will depend on your experience and previous qualifications, which could be the level 3 bridging course or direct entry onto level 4.

By completing this course students should aspire to progress in to higher level engineering or management industry roles. They will be encouraged to join industry professional bodies such as the Chartered Institute of Building Services Engineers (CIBSE) and register with the Engineering Council at Engineering Technician Level.

Entry requirements:

A BTEC Extended Diploma, Diploma, Subsidiary Diploma, Level 3 Advanced Apprenticeship or one A Level, in a relevant subject such as maths or science. Alternative qualifications and relevant experience may also be considered.

Course length:

Between 1.5 and 2.5 years

Typical units include:

These are listed below, all units are subject to change and are provided as a guide.

BTEC Level Diploma in BSE – bridging units 1 year

- Unit 5:** Health and Safety in Construction
- Unit 12:** Low Temperature Hot Water Systems
- Unit 14:** Provision of Primary Services in Construction
- Unit 21:** Building Services Science
- Unit 28:** Heating, Ventilation and Air Conditioning Design
- Unit 31:** Electrical Principles in Building Services Engineering

BTEC Level 4 HNC in BSE – 1.5 years

Core units:

- Unit 1:** Individual Project
- Unit 2:** Construction Technology
- Unit 12:** Construction Practice & Management

Specialist - mandatory units:

- Unit 8:** Mathematics for Construction
- Unit 9:** Principles of Heating Services Design & Installation
- Unit 10:** Principles of Ventilation and Air Conditioning Design & Installation
- Unit 48:** Scientific Principles for Building Services

Optional unit to meet industry needs:

- Unit 19:** Principles of Electrical Design & Installation

Level 5 Higher National Diploma (BSE)

The Level 5 BTEC Higher National Diploma offers students the opportunity to develop a sound understanding of the principles of Building Services Engineering. It is designed to support progression into employment or on to degree-level study.

After completing the HNC students can attend this 1.5 year course to top up their qualification to a HND comprising of seven more units.

Course length:
1.5 years

Typical units include:

These are listed to the right, all units are subject to change and are provided as a guide.

Core unit:

Unit 22: Group Project

Specialist - mandatory units:

Unit 28: Further Mathematics for Construction

Unit 31: Advanced Heating, Ventilation and Air Conditioning Design & Installation

Unit 49: Thermofluids & Acoustics

Optional unit to meet industry needs:

Unit 32: Building Management Systems

Unit 36: Advanced Building Information Modelling

Unit 40: Alternative Energy Systems Design & Installation



Apprenticeship Training

Level 3 Building Services Design Technician

This Level 3 Building Services Design Technician Apprenticeship is available to anyone aged over 16. The recommended qualifications for the achievement of the standard will be a Level 3 Diploma in Construction and the Built Environment (Building Services Engineering) and a Level 3 Diploma for Building Services Engineering Technicians.

The apprentice will complete an online portfolio of evidence which will be supervised by in-company mentors and LCB assessors. Completion of the apprenticeship standard will be confirmed following the satisfactory conclusion of an end-point assessment.

Entry requirements:

Employers will set their own entry requirements, but apprenticeship candidates will typically have at least 4 or 5 GCSEs at grade 9-4 (A*-C) including Maths, English and Science or their equivalent.

Duration:

The typical duration for this apprenticeship is 3 years.

Information for employers:

If you are considering taking on an apprentice and would like to find out more please get in touch with the Apprenticeship Team. They will be able to advise you on the course content, offer advice for levy and non-levy payers and provide details on the end-point assessment.

T: 0113 222 6023 E: wbl@lcb.ac.uk

Funding band:

£12,000

Further information:

For more information on the apprenticeship standard please visit the Institute for Apprenticeships website and search for Level 3 Building Services Design Technician, alternatively if you are using the electronic version, you can click on the link below.

**Apprenticeship standard
(Building Services Design Technician)**





Level 3 Digital Engineering Technician

This apprenticeship is available to anyone over 16.

The role of a Digital Engineering Technician is to produce detailed solutions to achieve the optimum performance of built environment projects via digital models and presentations using software, sketches and electronic visualisations. Apprentices will typically support digital engineers or other functional specialists in completing complex tasks using digital engineering techniques.

The apprentice will complete an online portfolio of evidence which will be supervised by in-company mentors and LCB assessors. Apprentices will achieve a Level 3 Diploma and develop the knowledge, skills and behaviours required to achieve Technician/Associate status through a number of professional institutions, including The Institution of Civil Engineers and The Royal Institution of Chartered Surveyors.

Entry requirements:

Employers will set their own entry requirements, but apprenticeship candidates will typically have at least 4 or 5 GCSEs at grade 9-4 (A*-C) including Maths, English and Science or their equivalent.

Duration:

The typical duration for this apprenticeship is 3 years.

Information for employers:

If you are considering taking on an apprentice and would like to find out more please get in touch with the Apprenticeship Team. They will be able to advise you on the course content, offer advice for levy and non-levy payers and provide details on the end-point assessment (EPA).

T: 0113 222 6023 E: wbl@lcb.ac.uk

Funding band:

£21,000

Further information:

For more information on the apprenticeship standard please visit the Institute for Apprenticeships website and search for Level 3 Digital Engineering Technician, alternatively if you are using the electronic version, you can click on the link below.

**[Apprenticeship standard
\(Digital Engineering Technician\)](#)**



Level 4 Building Services Engineering Technician

This is a Level 4 Building Services Engineering Technician apprenticeship and is approved by the Chartered Institution of Building Services Engineers as meeting the educational requirements for EngTech LCIBSE.

The apprentice will complete an online portfolio of evidence which will be supervised by in-company mentors and LCB assessors. Completion of the apprenticeship standard will be confirmed following the satisfactory conclusion of an end-point assessment.

Entry point:

This apprenticeship standard is a level 4 but includes 1 year study at level 3 if required, which will be determined by the apprentices previous experience and qualifications.

Entry requirements:

A BTEC Extended Diploma, Diploma, Level 3 Advanced Apprenticeship or one/two A Level(s), in a relevant subject (maths and science). Alternative qualifications and relevant experience may also be considered. Employers may specify additional entry requirements.

Duration:

The typical duration for this apprenticeship is 3 years.

Link to professional registration:

This apprenticeship will include the knowledge, skills and behaviours required to achieve technician status with the Chartered Institution of Building Services Engineers (EngTech LCIBSE). The Technician Professional Review process for EngTech LCIBSE is included in the end-point assessment process for this apprenticeship and will lead to the designatory letters EngTech LCIBSE and the status of Engineering Technician.

Information for employers:

If you are considering taking on an apprentice and would like to find out more please get in touch with the Apprenticeship Team. They will be able to advise you on the course content, offer advice for levy and non-levy payers and provide details on the end-point assessment.

T: 0113 222 6023 E: wbl@lcb.ac.uk

Funding band:

£12,000

Further information:

For more information on the apprenticeship standard please visit the Institute for Apprenticeships website and search for Level 4 Building Services Engineering Technician, alternatively if you are using the electronic version, you can click on the link below.

**[Apprenticeship standard
\(Building Services Engineering Technician\)](#)**

Professional Bodies

There are a several professional bodies associated with the courses published in this guide, with many offering, student, technician and associate membership. The type of membership will depend on the course and level being studied, for further information please visit each institution's website.

CIBSE (The Chartered Institution of Building Services Engineers)

CIBSE promotes the career of building services engineers by accrediting courses of study in further and higher education, by approving workbased training programmes and providing routes to full professional registration and membership, including Chartered Engineer, Incorporated Engineer and Engineering Technician.

Other professional bodies include:

Chartered Association of Building Engineers (CABE)

The Institution of Engineering & Technology (IET)

The Institute of Workplace and Facilities Management (IWFM)



Engineering Council Registration

The Engineering Council is the UK regulatory body for the engineering profession. They hold the national registers of 235,000 Chartered Engineers (CEng), Incorporated Engineers (IEng), Engineering Technicians (EngTech) and Information and Communications Technology Technicians (ICTTech).

We will encourage eligible students to register: www.engc.org.uk



How to Apply

Level 3 Diploma

To apply for this course or to submit a general enquiry please contact the Admin Team, by emailing hecm@lcb.ac.uk or calling **0113 222 6061**.

HNC & HND

To apply for a HNC or HND please complete the higher education form at www.lcb.ac.uk/apply

A member of the team will then contact you and confirm the next steps; if you meet the entry criteria you will be provided with details on how you can enrol.

Apprenticeships

You can apply for an apprenticeship course by completing the form at www.lcb.ac.uk/apply

Simply select the course you want to apply for and a member of the team will contact you regarding your application. For level 3 courses select the apprenticeships form, and for level 4 and 5 courses select the higher apprenticeships form.

Information for Employers

The apprenticeship and part-time courses we offer are designed to work for people who want to study whilst in employment. As an employer, staff training and career progression is a considerable responsibility. Sponsoring your staff to attend courses at LCB is a great way for both employees and employers to benefit.

We have built incredibly robust connections with regional and national construction organisations; working in partnership with them to increase the skills of their workforce and enabling them to provide a better product or service.

If you are considering taking on an apprentice and would like to find out more please get in touch with the Apprenticeship Team. They will be able to advise you on the course content, offer advice for levy and non-levy payers and provide details on the end-point assessment.

T: 0113 222 6023

E: wbl@lcb.ac.uk

General Enquiries

The HECDM, Apprenticeship and Student Services Teams are available at any time if you want to speak to them about the higher education opportunities available, start dates and the application process.

You can contact them on:

Apprenticeship Team: **0113 222 6023**

HECDM Team: **0113 222 6061**

Student Services Team: **0113 222 6002**

Building Services Engineering Curriculum Manager

Richard Leese BSc (Hons)

rleese@lcb.ac.uk

Higher Education, Construction Design & Management

Assistant Faculty Director

Chris Tunningley BSc MSc IEng MIET

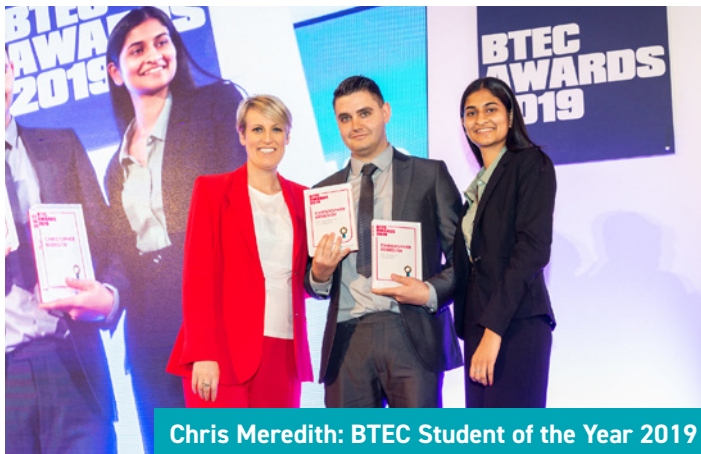
ctunningley@lcb.ac.uk

Outstanding Apprentices, Students & Award Winners

Many of our students and apprentices are recognised for their outstanding work and achievements, receiving national scholarships and regional and national awards. The College was also awarded FE Week Apprenticeship Provider of the Year in 2020, and BTEC Apprenticeship Provider of the Year in 2018.

Since 2015 students from the College have received over 65 awards, including high profile industry accolades such as:

- ▶ BTEC Student of the Year
- ▶ BTEC Apprentice of the Year 19+
- ▶ BTEC Construction Student of the Year
- ▶ BTEC Higher National Student of the Year
- ▶ New Civil Engineer Apprentice of the Year
- ▶ Women in Rail Awards Apprentice of the Year
- ▶ CIBSE Young Engineer of the Year
- ▶ Women in Construction Awards Best Apprentice under 25
- ▶ CIBSE Exceptional Academic Achievement Award
- ▶ G4C Apprentice of the Year



Chris Meredith: BTEC Student of the Year 2019



Jemma Gillman: Women in Rail Awards Apprentice of the Year 2019

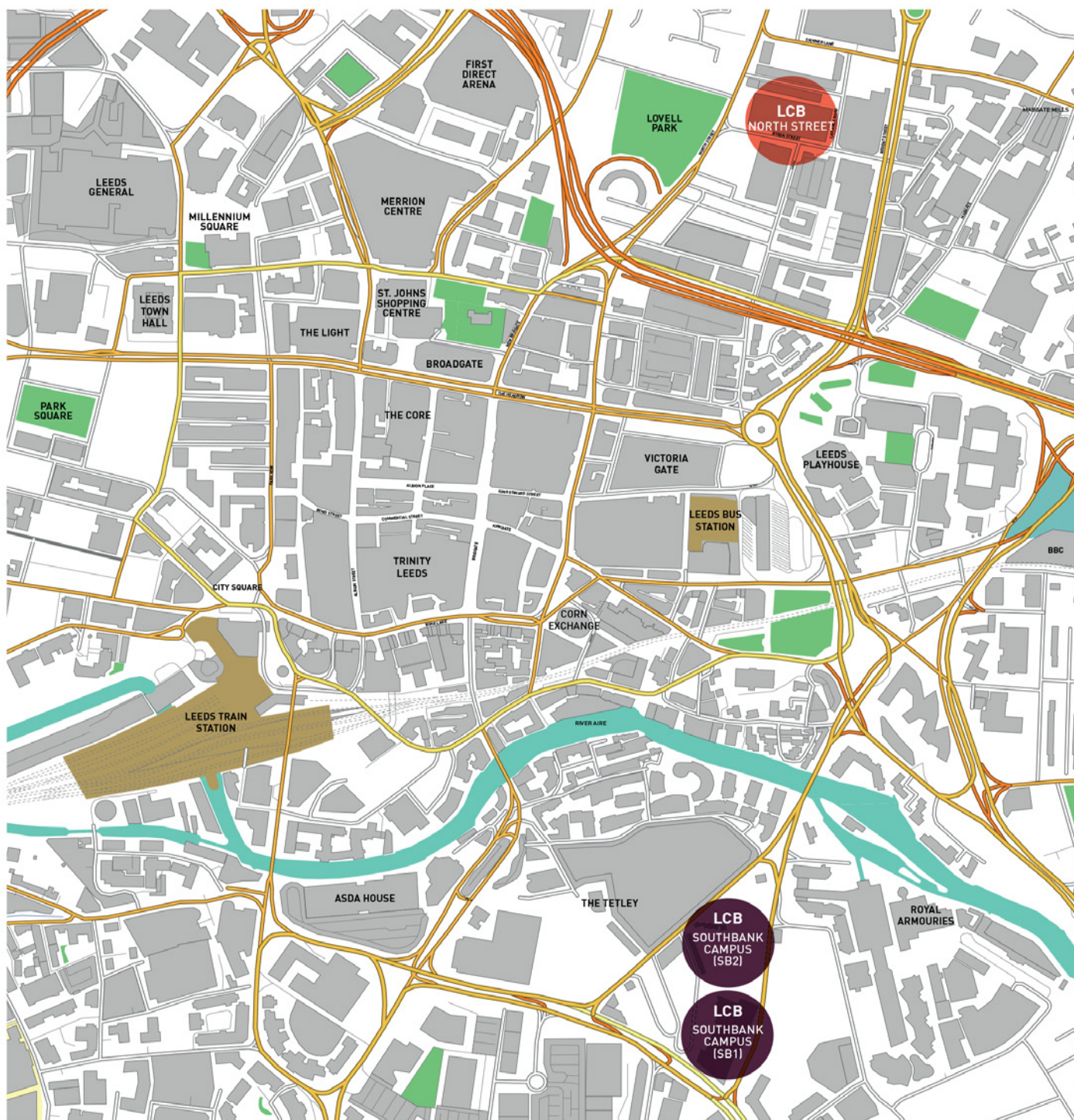


Ruth Watson: New Civil Engineer Apprentice of the Year 2018



College staff at the FE Week Awards 2020

Where to find us



North Street Campus

0113 222 6000

North Street

Leeds

LS2 7QT

South Bank Campus (SB1 & SB2)

0113 222 6003

Cudbear Street

Leeds

LS10 1EF

(Sat Nav LS10 1HD)

Please note: The College reserves the right to change any of the courses listed in order to meet the needs of the construction industry. Please note that the information included in this course guide is correct at the time of going to print and is subject to change.