

WEST LONDON INSTITUTE OF TECHNOLOGY

EMPLOYERS BROCHURE

WEST LONDON

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A merger between Harrow College & Uxbridge College

OUR MISSION

We create choice, opportunities and success.
Your future is our priority.

OUR VISION

At the heart of the West London Institute of Technology will be 'design engineering', a concept incorporating a multidisciplinary approach across engineering, digital and construction sectors to develop the future higher-level skills of individuals to solve real world problems for employers, to improve productivity and add economic value in west London, London and beyond.

The information in this brochure was correct at time of publication. West London Institute of Technology (WLIoT) issues this information as a general guide to its policies and facilities and reserves the right to modify or alter, without prior notice, any of the contents herein or otherwise advertised. WLIoT regularly reviews its offer and therefore courses, qualifications, facilities and fees may be subject to change.

Please visit our website www.westlondoniot.ac.uk for the latest information. We endeavour to provide information in alternative formats. If you require an alternative format, please contact us on 01895 853333.

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West London Institute of Technology (WLIoT) sets out to meet the current and future needs of employers.

Working in partnership with employers and higher education institutions, WLIoT provides students with high-level technical qualifications and the skills demanded by employers in the construction, digital and engineering sectors. This brochure provides details of the courses and apprenticeships available within these sectors, along with a road map to show progression opportunities.

If you would like to find out more about the courses available or discuss opportunities, please get in touch.

BENEFITS TO EMPLOYERS

- » Tackle current skill gaps and prepare for future skill needs
- » Develop and retain local talent, reducing the need to recruit out of the region
- » Industry standard, specialist training facilities situated in an accessible location
- » Learning provision tailored to the needs of employers
- » Opportunity to retrain and upskill existing staff through high-quality provision and assist them to gain prestigious and industry specific qualifications
- » Attract new talent to the digital, engineering and construction sectors by working with students that are gaining the skills you need
- » Provide strategic leadership across STEM provision
- » Develop a pipeline of future talent that is qualified and ready to work in your business.



HOW EMPLOYERS CAN GET INVOLVED WITH WLIoT

We work closely with a number of employers in the computing, construction and digital sectors who form our Employer Advisory Group (EAG). They work with us to ensure that the curriculum content meets industry needs. The group's remit includes:

- » Providing insight into sector trends and labour market
- » Assisting in the development of curriculum
- » Providing placements and masterclasses for students to gain first-hand skills and experience
- » Presenting students with opportunities to work on real life projects and business challenges - either in the workplace or in the classroom
- » Guest lecturing and industry talks
- » Supporting teachers and staff with developmental sector-based knowledge
- » Taking part in WLIoT events
- » Supporting marketing activity.

Employers are at the heart of WLIoT. We need you on board to advise on the skills needed and help develop a thriving future for the STEM sectors. If you are interested in joining the WLIoT Employer Advisory Group please email enquiries@wliot.ac.uk

OUR ANCHOR PARTNERS

WLIoT's lead partner, HCUC has a focus on curriculum development working alongside anchor partner employers Brunel University London, Fujitsu, Heathrow and West London Business. Here is what our anchor employers said about West London IoT at the time of our inception in 2019.



Ash Merchant,
Education Director for Fujitsu UK&I and Global Subject Matter Expert

"As an Anchor Employer Partner to HCUC we are committed to supporting the vision of creating a strong digital infrastructure, with outstanding curriculum that will support the digital economy for west London and beyond. We look forward to working with HCUC, making their vision come to reality and creating an IoT that will enable individuals to be fit for a digital economy."

Heathrow

Bally S Grewal,
Director of IT Programmes at Heathrow Airport

"We are proud to be a partner of the West London Institute of Technology. There is a vital need to bridge the skills gap in the UK, achievable through the provision of top quality training and apprenticeships. This is the latest step we have taken which will ensure future generations are more skilled than ever and we look forward to working in this partnership, increasing skills in west London and beyond and helping the next generation realise their potential."



Andrew Dakers,
Chief Executive of West London Business

"Sat at the heart of the UK's global gateway the IoT will be both a local and national asset that helps ensure we have the talent pipeline to propel west London's £73bn economy forward filling some significant skills gaps. We look forward to building the community of employers that will help shape the curriculum, bringing new partners on board as we plan for launch and beyond."



Professor Julia Buckingham CBE,
Vice-Chancellor and President of Brunel University London

"I am delighted that we will be working together with our partners to establish an Institute of Technology for people in west London and surrounding areas. Increasing the opportunities for young people and those already in employment to build essential engineering and technology skills - part of the STEM subjects, which have significant skills shortages - will help our local and national economies thrive."

WEST LONDON IOT CAMPUS



Based at Uxbridge College, West London IoT campus has a brand new building with high quality facilities and state-of-the-art equipment to ensure students have everything they need to develop skills and knowledge needed in industry. For more information visit www.westlondoniot.ac.uk

Follow West London IoT on Social Media



ROAD MAP - ENGINEERING

Engineering Full-Time & Part-Time Courses

LEVEL 3	LEVEL 4	LEVEL 5	LEVEL 6
<p>Pearson BTEC Level 3 - National Foundation Diploma in Engineering (Mechanical) Y1</p> <p>Pearson BTEC Level 3 - National Foundation Diploma in Engineering (Electrical/Electronic) Y1</p> <p>Access to Engineering Science & Maths Y4.</p>	<p>Pearson BTEC Level 4 HNC in Engineering (Mechanical Engineering) Y1</p> <p>Pearson BTEC Level 4 HNC in Engineering (Electrical/Electronic) Y1</p> <p>Pearson BTEC Level 4 HNC in Engineering (General) Y1.</p>	<p>Pearson BTEC Level 5 HND in Engineering (Mechanical Engineering) Y1</p> <p>Pearson BTEC Level 5 HND in Engineering (Electrical/Electronic) Y1</p> <p>Pearson BTEC Level 5 HND in Engineering (General) Y1.</p>	<p>Digital, Technology & Design Degree Top Up* Y3</p> <p>*new bespoke Brunel University London Degree Top Up for all Level 5 IoT students.</p>

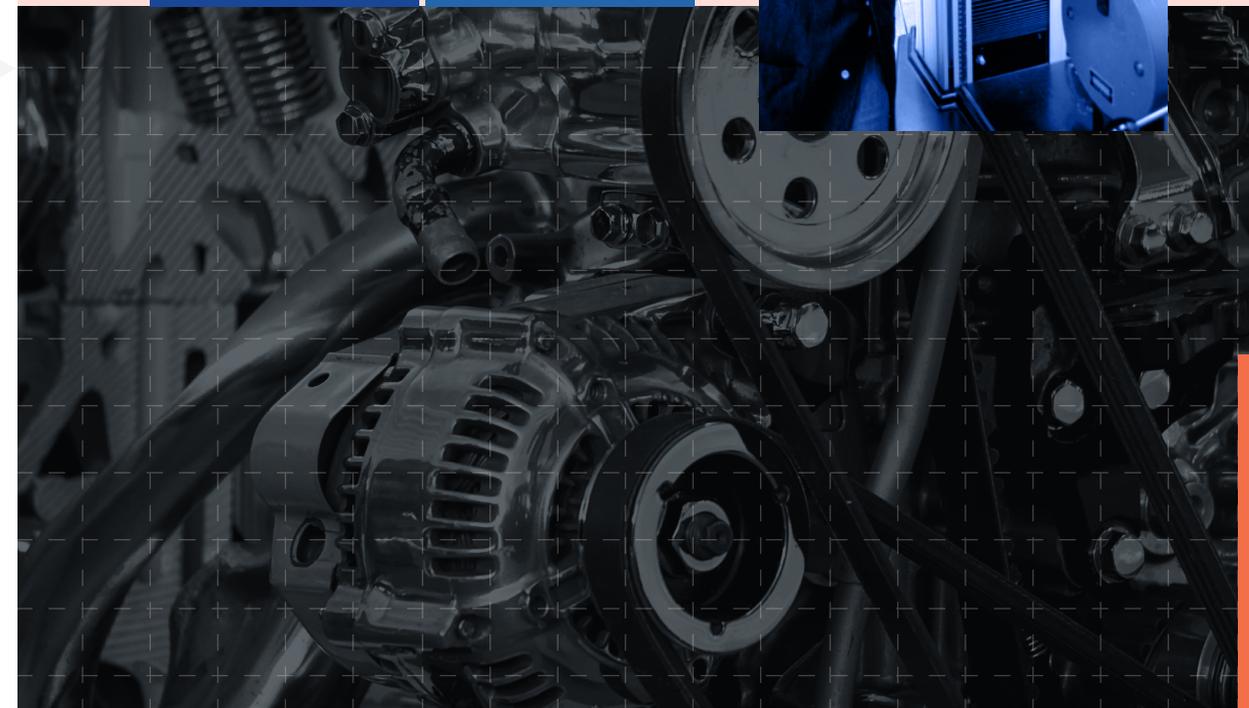
Engineering Apprenticeships

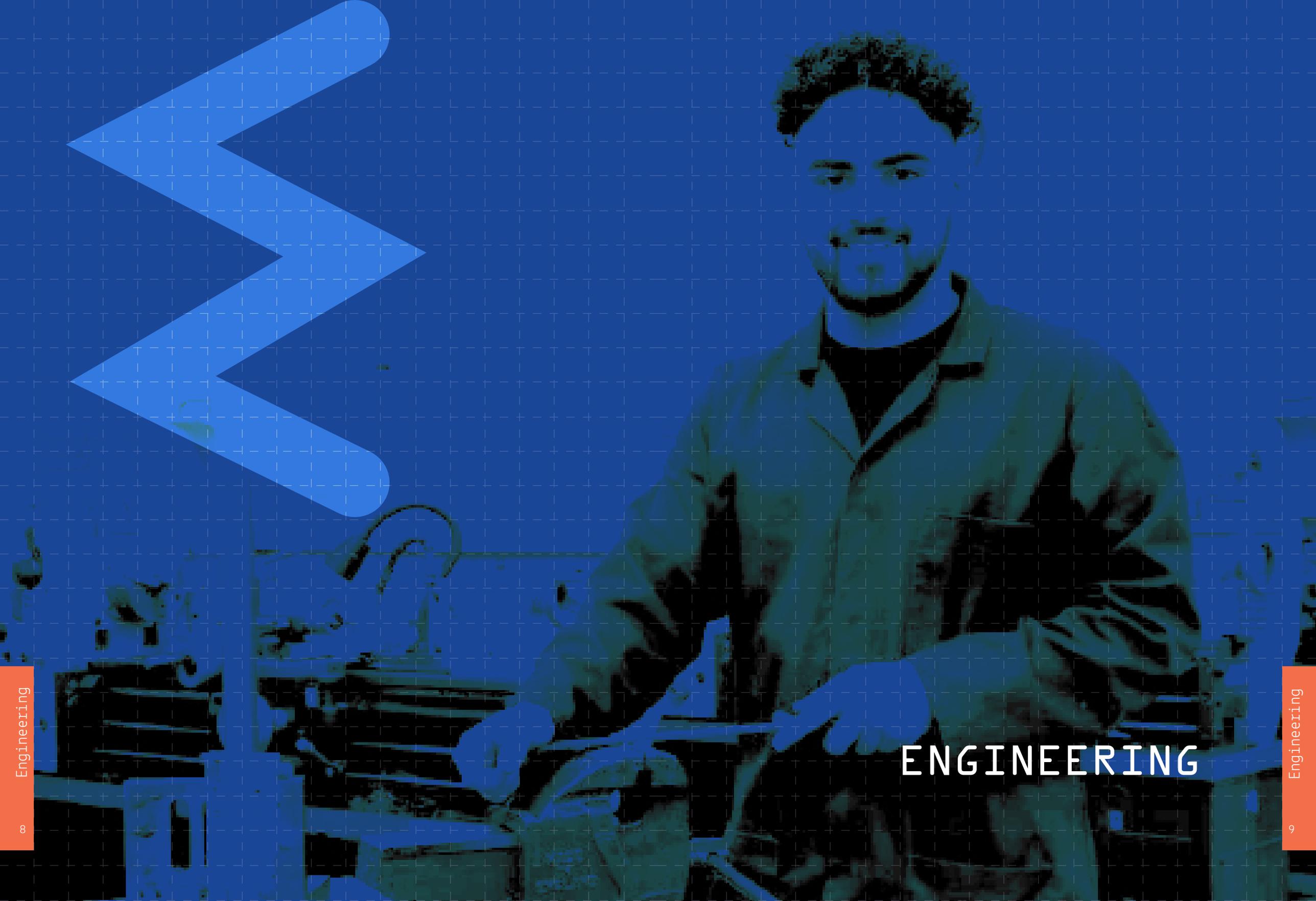
LEVEL 2	LEVEL 3	LEVEL 3	LEVEL 4
<p>Auto-Care Technician (L2).</p>	<p>Maintenance & Operations Engineering Technician Y1</p> <p>Installation/Maintenance Electrician (L3)</p> <p>Motor Vehicle Service and Maintenance Technician (Light Vehicle) (L3).</p>	<p>Engineering Fitter (L3)</p> <p>Gas Engineering Operative (L3).</p>	<p>Automation and Controls Engineering Technician (L4)</p> <p>Engineering Manufacturing Technician (L4).</p>

WORKFORCE DEVELOPMENT

Engineering CPD Courses

Current Offer	From 2021/22
<p>BMS Control Systems Theory and Programming</p> <p>18th Edition Wiring Regs</p> <p>Award in Inspection and Testing of Electrical Installations</p> <p>Smart Home Installation</p> <p>AutoCAD 3D.</p>	<p>Introduction to CNC</p> <p>Introduction to Turning (Lathes).</p>





ENGINEERING

Pearson BTEC Level 3 National Foundation Diploma in Engineering (Mechanical Engineering)

Mandatory units:

- » Health and safety in the engineering workplace
- » Communication for engineering technicians
- » Engineering project
- » Mathematics for engineering technicians
- » Mechanical principles and applications.

Specialist units:

- » Business operations in engineering
- » Engineering design
- » Properties and applications of engineering materials
- » Further mechanical principles and applications
- » Applications of mechanical systems in engineering
- » Principles and applications of fluid mechanics
- » Engineering drawing for technicians
- » Electrical and electronic principles
- » Engineering primary forming processes
- » Engineering secondary and finishing techniques and processes
- » Applications of computer numerical control in engineering
- » Further mathematics for technicians.

MODE: FULL-TIME

DURATION
1-2 YEARS

Pearson BTEC Level 3 National Foundation Diploma in Engineering (Electrical and Electronic Engineering)

Mandatory units:

- » Health and safety in the engineering workplace
- » Electrical and electronic principles
- » Mathematics for engineering technicians
- » Mechanical principles and applications
- » Engineering design
- » Principles & applications of electronic devices & circuits
- » Electrical technology
- » Electronic fault-finding
- » Features and applications of electrical machines.

Year 2 includes:

- » Communications for engineering technicians
- » Engineering project
- » Business operations in engineering
- » Principles and applications of analogue electronics
- » Construction and applications of digital systems
- » Microprocessor systems and applications
- » Further mathematics for engineering technicians
- » Further electrical principles.

MODE: FULL-TIME

DURATION
1-2 YEARS

Pearson BTEC Level 4 HNC in Engineering (General Engineering)

All units in year 1 are 15 credit units.

Core units (Mandatory):

- » Engineering design (Yearly)
- » Engineering maths (Yearly)
- » Engineering science (Semester 1)
- » Managing a professional engineering project (Pearson-set) (Yearly).

Specialist units (Mandatory):

- » Electrical and electronic principles (Yearly)
- » Mechanical principles (Yearly).

Additional specialist units:

- » Material, properties and testing (Yearly)
- » Electrical machines (Yearly).

MODE
FULL-TIME

DURATION
1 YEAR



Pearson BTEC Level 5 HND in Engineering (General Engineering)

All units in year 1 are 15 credit units.

Core units (Mandatory):

- » Research project (Yearly)
- » Professional engineering management (Pearson-set) (Yearly).

Specialist units (Mandatory):

- » Further mathematics (Yearly)
- » Virtual engineering (Yearly)
- » Lean manufacturing (Yearly).

Additional specialist units:

- » Analogue electronic systems (Yearly)
- » Thermofluids (Yearly).

MODE
FULL-TIME

DURATION
1 YEAR

Pearson BTEC Level 4 HNC in Engineering (Electrical and Electronic Engineering)

First year core units (Mandatory):

- » Engineering maths (Yearly)
- » Engineering science (Semester 1).

Specialist units (Mandatory):

- » Electrical and electronic principles (Semester 2).

Additional specialist units:

- » Digital principles (Yearly).

Second year core units (Mandatory):

- » Engineering design (Yearly)
- » Managing a professional engineering project (Pearson-set) (Yearly).

Additional specialist units:

- » Electrical machines (Semester 2)
- » Electronic circuits and devices (Semester 1).

MODE
FULL-TIME
PART-TIME

DURATION
1 YEAR

Pearson BTEC Level 5 HND in Engineering (Electrical and Electronic Engineering)

All units in year 1 are 15 credit units.

Core units (Mandatory):

- » Engineering design (Yearly)
- » Engineering maths (Yearly)
- » Engineering science (Semester 1)
- » Managing a professional engineering project (Pearson-set) (Yearly).

Specialist units (Mandatory):

- » Electrical and electronic principles (Semester 2).

Additional specialist units:

- » Electrical machines (Semester 2)
- » Digital principles (Yearly)
- » Electronic circuits and devices (Semester 1).

MODE
FULL-TIME
PART-TIME

DURATION
FULL-TIME: 1 YEAR
PART-TIME: 2 YEARS



Pearson BTEC Level 4 HNC in Engineering (Mechanical Engineering)

First year core units (Mandatory):

- » Engineering design
- » Engineering maths
- » Engineering science
- » Specialist units
- » Mechanical principles.

Second year core units (Mandatory):

- » Managing a professional engineering project (Pearson-set)
- » Specialist units
- » Fundamentals of thermodynamics and heat engines.

Additional specialist units:

- » Fluid mechanics
- » Materials, properties and testing.

MODE FULL-TIME PART-TIME
DURATION FULL-TIME: 1 YEAR PART-TIME: 2 YEARS

Pearson BTEC Level 5 HND in Engineering (Mechanical Engineering)

Core units (Mandatory):

- » Engineering design
- » Engineering maths
- » Engineering science
- » Managing a professional engineering project (Pearson-set).

Specialist units (Mandatory):

- » Mechanical principles
- » Fundamentals of thermodynamics and heat engines.

Additional specialist units:

- » Fluid mechanics
- » Materials, properties and testing.

MODE FULL-TIME PART-TIME
DURATION FULL-TIME: 1 YEAR PART-TIME: 2 YEARS

Auto-Care Technician (L2)

Overview of the role:

An auto-care technician carries out a range of services and repairs to cars, car derived vans and light goods vehicles, working in an auto-care or "fast-fit" centre, which may be part of a national chain or operated by a regional/local independent group/owner. An auto-care technician requires a unique combination of technical, retail and customer service skills.

They will use a range of tools, measuring and diagnostic equipment to identify & repair simple system faults. The auto-care technician has to demonstrate expertise not only in the technical elements of their role and have a good grasp of the practical and theoretical aspects of the vehicle systems they service, but also needs to have excellent telephone, customer handling (including how to handle difficult customers and deal with customer disappointment) and effective sales skills, as well as strong problem solving and self-organisation skills.

They must be able to work as part of a team but also operate independently, understand how their centre operates from a commercial perspective and how their actions contribute to business results, whilst maintaining a high standard of workmanship.

Entry requirements:

Individual employers will set their own selection criteria for applicants. It is however recommended that candidates can demonstrate an interest in the occupation as well as an ability to work in an organised and methodical way to identify and solve problems; also demonstrate an ability to communicate both orally and in writing.

Apprentices without Level 1 English and maths will need to achieve this level and take the test for Level 2 prior to taking their apprenticeship end-point assessment. For those with an Education, Health and Care Plan or legacy statement, the English and maths minimum requirement is Entry Level 3. British Sign Language is accepted as an alternative to English where it is the student's primary language.

MODE APPRENTICESHIP
DURATION UP TO 30 MONTHS

Maintenance and Operations Engineering Technician (L3)

Overview of the role:

Maintaining the safety, integrity and effective operation of plant and equipment in industries that are part of the national infrastructure engineering sector, such as electricity generating, oil and gas refining and pharmaceuticals.

Occupational profile:

Maintenance & operations engineering technician covers 7 roles: electrical technicians; mechanical technicians; control & instrumentation technicians; wind turbine technicians electrical system and process control technicians; electromechanical technicians and plant operations technicians.

They will maintain the safety, integrity and effective operation of plant and equipment in one or more of the following industries that are part of, or have activities that are part of, the broader national infrastructure Engineering Sector: the electricity generating environment, which may use a range of different fuels including coal, gas, nuclear, wind and other renewable sources; telecommunications power plants; oil and gas refining; nuclear waste reprocessing; processing and production of chemicals; pharmaceuticals; human and animal food; cosmetics; petrochemicals; sewerage and the exploration and exploitation of oil and gas.

MODE
APPRENTICESHIP

DURATION
36-42 MONTHS

Installation/Maintenance Electrician (L3)

Overview of the role:

Electricians install, maintain, and repair electrical systems in industrial, commercial and domestic environments. Electricians might work in both indoor and outdoor settings. Electrical equipment and systems may include switchboards, motors, cables, fuses, thermal relays, fault current protection switches, heating, lighting, air conditioning and metering equipment as well as crime and fire alarm systems and renewable energy technologies. They are able to work on their own proficiently and work without immediate supervision in the most efficient and economical manner.

They may contribute to the design of electrical systems. They are able to set out jobs from drawings and specifications and requisition the necessary installation materials.

Electrical safety is an important area of electricians' work. On completion of their work the electrical systems must be safe to use. They must adhere to safe working practices without endangering themselves or others.

Installation electricians work on the installation, testing, commissioning and maintenance of low voltage (less than 1000v) electrical and electronic devices and appliances. Maintenance electricians work on the maintenance of electrical and electronic installations including automated production systems. Duties include the supervision of the equipment, its maintenance and necessary repairs.

Entry requirements:

Individual employers will identify any relevant entry requirements in terms of previous qualifications, trainability tests, or other criteria. Candidates will have English and mathematics at Level 2 on entry or achieved A-C, 4-9 GCSE or equivalent English & maths.

MODE
APPRENTICESHIP

DURATION
UP TO 42 MONTHS

(This does not include EPA period.)

ADDITIONAL INFORMATION:

The installation/maintenance electrical apprenticeship standard provides the opportunity to learn and develop a range of knowledge, skills and behaviours including:

Understand and apply the principles, practices and legislation for the inspection, testing, commissioning and certification of electrotechnical systems and equipment in buildings, structures and the environment.

Understand and apply the principles, practices and legislation for diagnosing and correcting electrical faults in electrotechnical systems and equipment in buildings, structures and the environment.

Motor Vehicle Service and Maintenance Technician (Light Vehicle) (L3)

Overview of the role:

A Motor Vehicle Service and Maintenance Technician services and repairs light vehicles such as cars and vans and works either in dealerships which focus on a particular manufacturer, or in an independent garage which deals with many different makes of vehicles.

In a large dealership the technician will typically report to the workshop controller, who in turn reports to the aftersales manager and liaises with the service reception. In smaller garages the technician will report directly to the owner or garage manager. The technician must be able to work independently but also operate as an effective team member and have good customer handling skills. They will understand how their workshop and the dealership/garage functions from a commercial perspective and identify ways in which they can work more efficiently.

Technicians working in large dealerships work with other departments, for example carrying out work for the sales department and ordering parts from the parts department, whereas apprentices in smaller independent garages may be called upon to carry out some of the function of the other departments themselves, for example managing their own delivery of parts. The technician will work on all the systems found within the vehicle. The day-to-day work ranges from replacing simple parts through to solving complex faults with the use of diagnostic methods and equipment. The tasks faced are constantly changing, driven by the introduction of ever more complex technologies and diagnostic techniques.

Entry requirements:

Individual employers will identify any relevant entry requirements in terms of previous qualifications. Apprentices require Level 2 English and maths or A-C, 4-9 GCSE or equivalent.

MODE
APPRENTICESHIP

DURATION
36 MONTHS

(This does not include EPA period.)

Links to Professional Registration.

This standard has been designed to be recognised by relevant Professional Engineering Institutions and successful apprentices can apply for the appropriate level of professional registration (EngTech).



Engineering Fitter (L3)

Overview of the role:

The broad purpose of the occupation is to produce complex high value, low volume components or assemblies in full or part, using machines, equipment or systems, to the required specification. For example, turbines, cranes, gearboxes, production lines, rigs and platforms. Fitters may typically have a mechanical, electrical, electronic, control systems, pipe fitting or instrumentation bias or operate across multiple disciplines depending on the type of assembly. To produce or re-furbish the components fitters will interpret drawings/specifications and plan their work, for example ensuring they have the right tools, equipment and resources to complete the task to the required specification.

Fitters are required to check their work against quality standards and make adjustments as required based on their knowledge. On completion of the task a fitter will hand over the product and prepare the work area for the next task by checking equipment meets the standards required to operate. They may be based in a workshop or clients premises - this may include hazardous environments.

Entry requirements:

Individual employers will identify any relevant entry requirements in terms of previous qualifications. Apprentices require Level 2 English and maths or A-C, 4-9 GCSE or equivalent.

MODE
APPRENTICESHIP

DURATION
UP TO 42 MONTHS

(This does not include EPA period.)

Gas Engineering Operative (L3)

Overview of the role:

Gas engineering involves the safe installation, commission, decommission and the ongoing service and repair of gas appliances in either a domestic or non-domestic setting. Appliances can include, but are not limited to, a range of work categories such as central heating boilers, unvented hot water storage, ducted air heaters, cookers, space heaters, meters, alternative fuel, boosters, testing and purging for industrial pipework. Roles in gas engineering will include explaining how installations and appliances work, providing energy efficiency advice and ensuring customer service excellence at all times. Gas engineering operates strictly within the requirements of health and safety legislation.

Roles in gas engineering are physical in nature, and may involve lifting and moving of equipment, working at heights and working in confined spaces. All gas engineers must be registered on the gas safe® register for each appliance in which they are competent to undertake work on.

Applicants will normally have gained a minimum of 3-5 GCSEs (grade A-C) or equivalent, preferably English, mathematics and a science or relevant / appropriate experience. Individual employers will set the selection criteria for their apprenticeship and will include a recognised background check, equivalent to Criminal Record Bureau/Disclosure and Barring Service (CRB/DBS).

Those who work within gas engineering must have the core requirements below and demonstrate the technical requirements in one setting - domestic or non-domestic. They must be registered on the gas safe® register for four appliances.

Entry requirements:

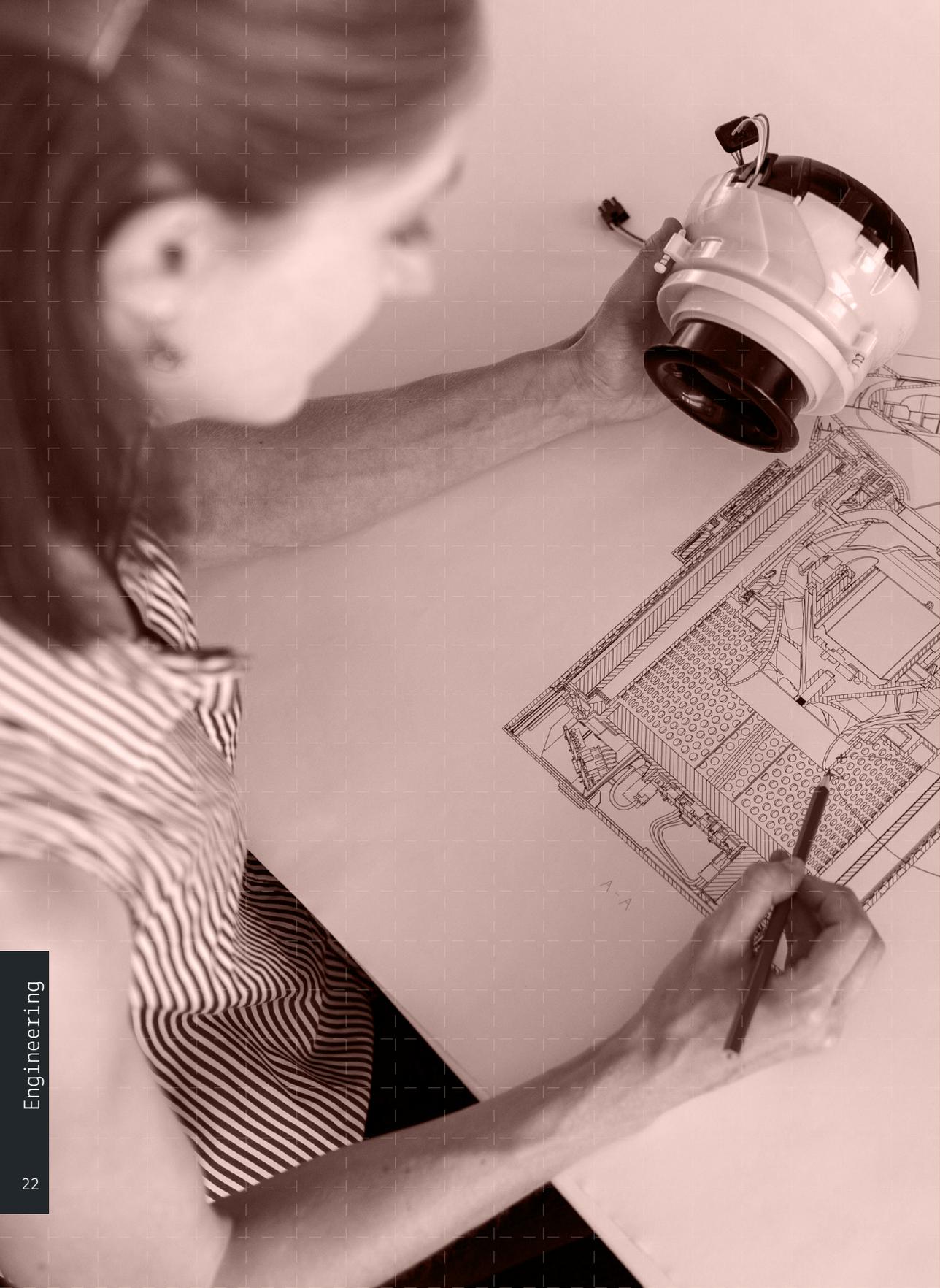
Individual employers will identify any relevant entry requirements in terms of previous qualifications. Apprentices require Level 2 English and maths, A-C, 4-9 GCSE or equivalent.

MODE
APPRENTICESHIP

DURATION
UP TO 18 MONTHS

ADDITIONAL INFORMATION:

In achieving a pass or a distinction in this apprenticeship, the successful apprentice will be eligible to apply for membership with the Institution of Gas Engineers & Managers (IGEM) professional registration as an Engineering Technician (EngTech).



Automation and Controls Engineering Technician (L4)

Overview of the role:

This occupation is found in cross sector (e.g. automotive, food & drink, oil & gas, pharmaceutical, construction), companies involved in manufacturing (discrete or process), logistics or utilities environments. These employers may be directly involved in these activities or as a provider of services (e.g. systems integration, field service, technical consultancy) to these companies.

The broad purpose of the occupation is twofold. Where the role is based inside a manufacturing (discrete or process), logistics or utilities environments, a fully competent automation & control engineering technician will be able to install, maintain, fault find and optimise hardware and software for automation systems. Where the role is based in a service provider, OEM (Original Equipment Manufacturer) or approved solutions provider in large or SME (Small to Medium Enterprise) companies, the automation & control engineering technician will be the interface between the vendor and it's customer and will be able to competently provide high quality, engineering services such as installation, commissioning, fault finding (the activity of testing an installation prior to handover) and support.

For both iterations of this role, this would involve the above duties across a range of hardware such as on Programmable Logic Controllers (PLC), Human Machine Interfaces (HMI), robots and Industrial Networks (e.g. PROFIBUS, DeviceNet, PROFINET, ModBus). Use of physical tools, software tools and instruments (e.g. multi-meter), are fundamental to carrying out tasks associated with building (e.g. control panels), installing (e.g. site cabling) and maintaining of automation systems.

Entry requirements:

Individual employers will identify any relevant entry requirements in terms of previous qualifications. Apprentices require Level 2 English and maths or A-C, 4-9 GCSE or equivalent.

MODE
APPRENTICESHIP

DURATION
UP TO 48 MONTHS

(This does not include EPA period.)



Engineering Manufacturing Technician (L4)

Overview of the role:

This occupation is found in large and small engineering and manufacturing organisations providing products and services throughout a wide range of sectors, such as automotive, aerospace/airworthiness, chemical processing, land systems, marine, maritime defence, materials manufacturers and their respective supply chains. research indicates that the sector needs to recruit approximately 124,000 engineers and technicians every year.

The broad purpose of the occupation is to provide specialist technical support for engineers, so that organisations can develop, produce or test new/existing products, processes, or procedures to meet a customer specification in terms of quality, cost and delivery, as efficiently and effectively as possible. Engineering manufacturing technicians gather information and data from a range of sources and analyse the information/data.

They will make decisions, solve problems and produce and/or update technical documentation, reports or specifications covering areas such as quality, reliability, production schedules/targets, costing or other technical documentation that informs others, either internally or externally what needs to be done such as how a product must be designed, manufactured, tested, modified, maintained, stored, transported, commissioned or decommissioned.

Entry requirements:

Individual employers will set the selection criteria for their apprenticeships. In order to optimise success candidates will typically have 5 GCSEs at Grade C (Grade 4/5 in the new numerical GCSE grading system) or above, including mathematics, English and a science, technology or engineering related subject, or 90+ credits in an Engineering BTEC at Level 3.
*(As further guidance, the level of maths has an advisory GCSE level of grade B (Grade 5/6 in the new numerical GCSE grading system).)

MODE
APPRENTICESHIP

DURATION
UP TO 42 MONTHS

(This does not include EPA period.)

[Links to Professional Registration.](#)

[IET / Eng Tech](#)

[IMechE / Eng Tech](#)

[Royal Aeronautical Society / Eng Tech](#)

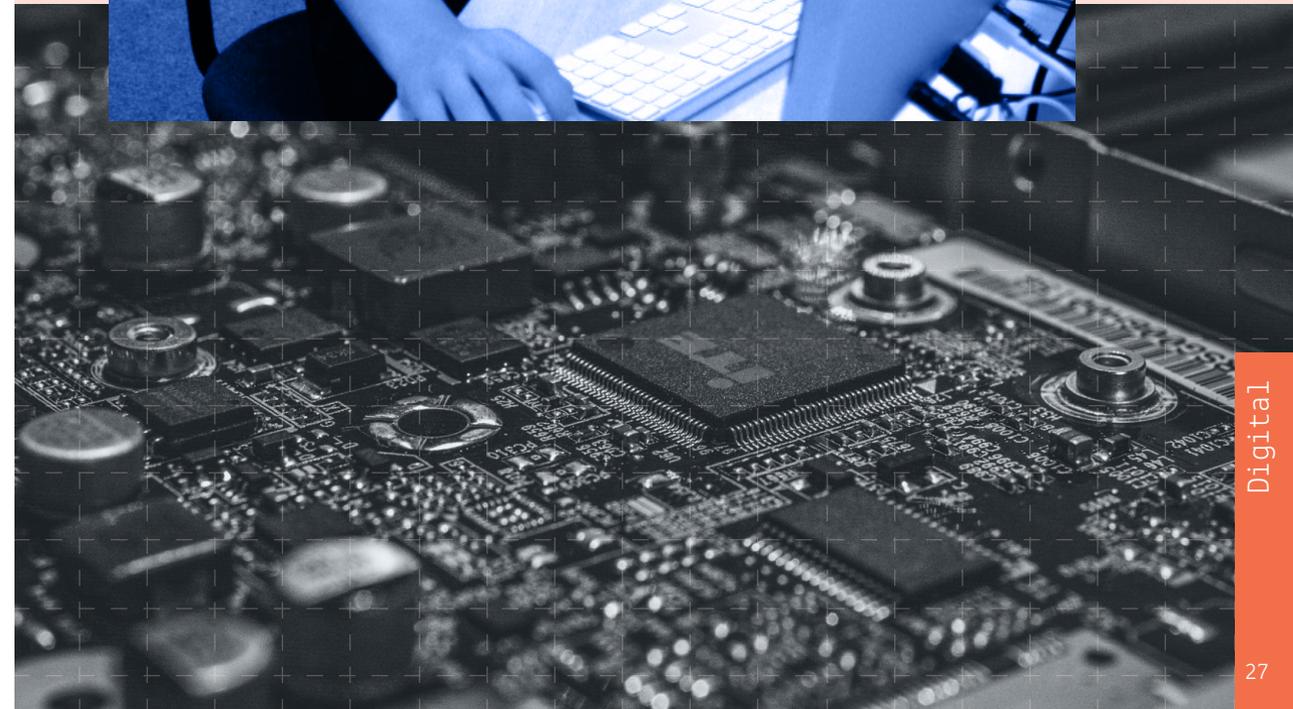
ROAD MAP - DIGITAL

Digital Full-Time & Part-Time Courses

LEVEL 3	LEVEL 4	LEVEL 5	LEVEL 6
<p>Access to Computing Y1</p> <p>BTEC Level 3 Extended Diploma in Computing Y1</p> <p>AIM Awards Level 3 Extended Diploma in Games, Animation & VFX Skills Y1</p> <p>T Level Digital Y1.</p>	<p>Pearson BTEC HNC in Computing Y1</p> <p>Pearson BTEC HNC in Computing Plus Y1</p> <p>Pearson BTEC HNC in Computing - Security Y1</p> <p>Pearson BTEC Higher National Certificate in Creative Media Production (Game Development) FT Only Y1.</p>	<p>Pearson BTEC Level 5 HND in Computing Y1</p> <p>Pearson BTEC Level 5 HND in Computing Plus Y1</p> <p>Pearson BTEC HND in Computing - Security Plus Y1</p> <p>Pearson BTEC HND in Creative Media Production (Game Development) Y1.</p>	<p>Digital, Technology and Design Degree Top Up* Y3.</p> <p>*new bespoke Brunel University London Degree Top Up for all Level 5 IoT students.</p>

Digital Apprenticeships

LEVEL 4	LEVEL 6
<p>Cyber Security Technologist (L4)</p> <p>Digital Marketer (L4).</p>	<p>Digital and Technology Solutions Professional Apprenticeship (L6).</p>





DIGITAL

Access to Computing Level 3

Core units:

- » Website development
- » Advanced CSS technique
- » Database design
- » Information research skills
- » Mathematics for computing
- » Logic & sets
- » Number systems
- » Operating systems & systems management
- » English
- » Hardware & software
- » Networking fundamentals
- » Preparing for HE.

MODE: FULL-TIME

DURATION
1 YEAR

BTEC Level 3 Extended Diploma in Computing

Course units include:

- » Fundamentals of computer systems
- » Principles of computer science
- » Systems methodology
- » Systems analysis
- » Software design and development project
- » HCI
- » The impact of computing
- » IT systems security & encryption
- » Business applications of social media
- » Project management
- » Mobile apps development
- » Games development
- » Object oriented programming.

MODE: FULL-TIME

DURATION
2 YEARS

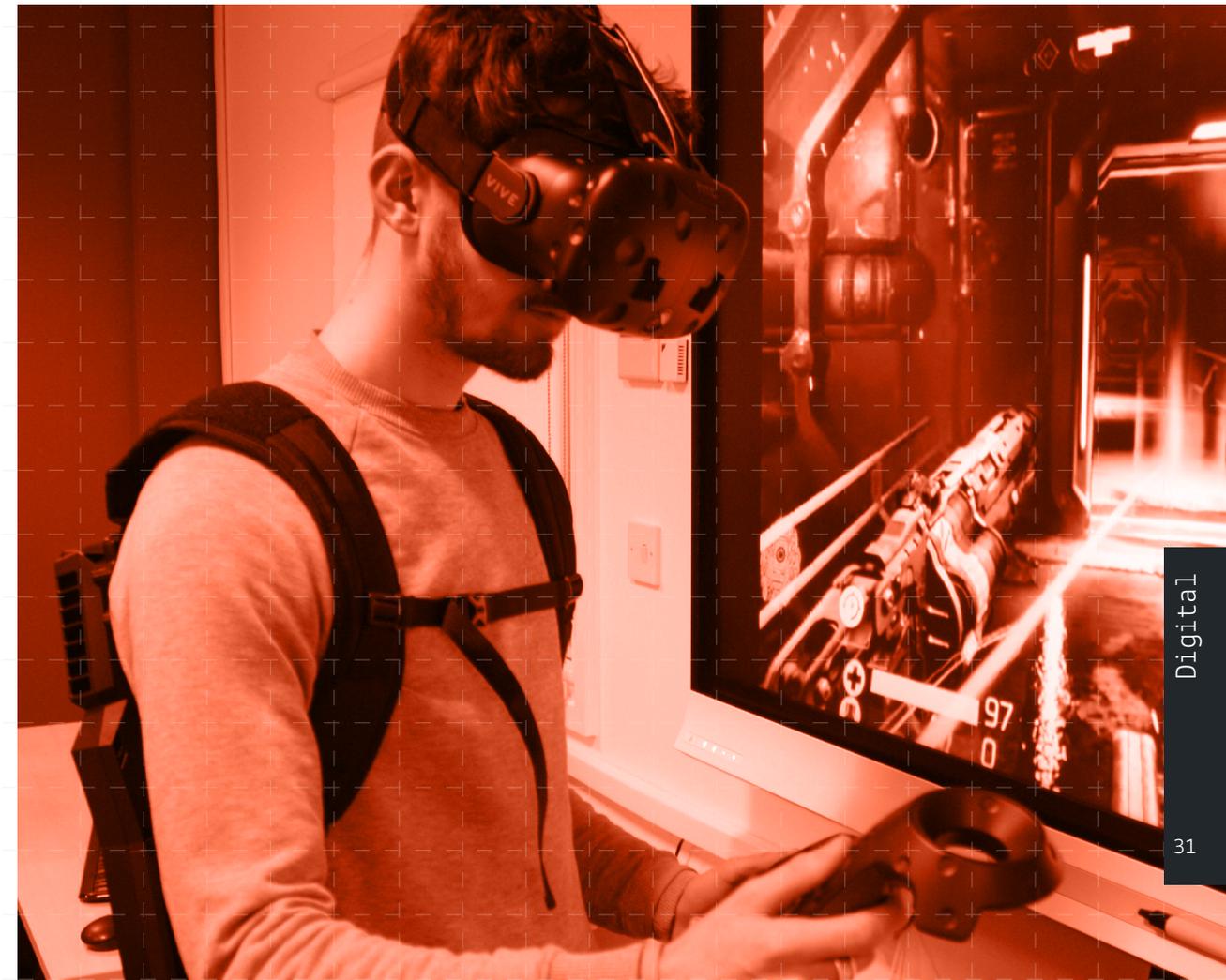
AIM Awards Level 3 Extended Diploma in Games, Animation & VFX Skills

Course units include:

- » VFX fundamentals for the games, animation and VFX industries
- » 3D tools: principles and practice
- » Core principles of game design
- » Art fundamentals for the games, animation and VFX industries
- » The games, animation and VFX industries
- » Maths fundamentals for the games, animation and VFX
- » Fundamental product programming skills
- » Fundamental animation skills for the games, animation and VFX industries
- » Production management.

MODE: FULL-TIME

DURATION
2 YEARS



Pearson BTEC Level 4 HNC & Level 5 HND in Computing

First year

In the first year students develop a broad knowledge and awareness of key aspects of the computing sector at Level 4 through six core units (mandatory), which include one unit assessed by a Pearson-set assignment.

The units are:

- » Programming
- » Networking
- » Professional practice
- » Database design & development
- » Security
- » Managing a successful computing project (Pearson-set)
- » Specialist units
- » Computer systems architecture
- » Website design & development.

Second year

In the second year students develop a broad knowledge and awareness of key aspects of the computing sector at Level 5 through 2 core units (mandatory), which include one unit assessed by a Pearson-set assignment.

The units are:

- » Computing research project (Pearson-set)
- » Business intelligence
- » Specialist units
- » Cloud computing
- » Network security
- » Advanced programming
- » E-Commerce & strategy
- » Artificial intelligence
- » Cisco "CCNAV7" Cisco "Cybersecurity Essentials" and Cisco "introduction to IoT" are integrated in the BTEC L4 & L5 HND in computing programme.

MODE: L4 HNC
FULL-TIME
PART-TIME

DURATION
FULL-TIME: 1 YEAR
PART-TIME: 2 YEARS

MODE: L5 HND
FULL-TIME
PART-TIME

DURATION
FULL-TIME: 1 YEAR
PART-TIME: 2 YEARS

Pearson BTEC Level 4 HNC & Level 5 HND in Computing Plus

The content of the BTEC Level 4 & Level 5 HNC/HND + programme is similar to the BTEC Level 4 & Level 5 HNC/HND programme except that the BTEC Level 4 Level 5 HNC/HND + programme includes the following 4 vendor qualifications from the Computing Technology Industry Association (CompTIA) delivered over two years.

First year

- » CompTIA A+
- » Network+

Second year

- » Security +
- » Cloud +

CompTIA certificates will be administrated separately through Pearson VUE testing centres, which we offer in Uxbridge College. Passing or failing the 2 vendor qualifications tests will have no impact on the BTEC HNC+ Computing progression.

MODE: L4 HNC
FULL-TIME

DURATION
FULL-TIME: 2 YEAR



Pearson BTEC Level 4 HNC & Level 5 HND in Computing - Security

Course content:

The programme, is designed to train tomorrow's security professionals, combining fundamental concepts and principles with exposure to current technologies and solutions. You will gain a practical understanding of key issues relating to the design, analysis and implementation of modern IT security systems.

First year

In the first year you will develop a broad knowledge and awareness of key aspects of the computing sector at Level 4 through six core units (mandatory) which include one unit assessed by a Pearson-set assignment and two further optional units at Level 4. The units are:

Mandatory units

- » Programming
- » Networking
- » Professional practice
- » Database design & development
- » Security
- » Managing a successful computing project (Pearson-set).

Optional units

- » Strategic information systems
- » Computer systems architecture.

Second year

In the second year you will gain skills in identifying and exploiting vulnerabilities in computer networks and systems, as well as learning how to protect them against hacker attacks.

Mandatory units

- » Computing research project (Pearson-set)
- » Business intelligence
- » Cryptography
- » Forensics
- » Information security management.

Optional units

- » Cloud computing
- » Network security.

MODE: L4 HNC
FULL-TIME

DURATION
1 YEAR

MODE: L5 HND
FULL-TIME

DURATION
1 YEAR

Pearson BTEC Level 4 HNC & Level 5 HND in Creative Media Production (Games Development)

Course content:

Students will be taught a range of industry-standard applications and techniques to assist in the design and creation of a fully functional 3D game environment.

First year

- » Individual project (Pearson Set) (Core)
- » Creative media industry (Core)
- » Professional practice (Core)
- » Game development practices (Specialist)
- » Games in context (Specialist)
- » Game design (Specialist)
- » Principles of animation
- » Principles of user experience and user interface design.

Second year

- » Collaborative project (Pearson Set)
- » Personal professional development
- » Advanced game development studies
- » Advanced rendering & visualisation
- » Advanced animation
- » Advanced 3D modelling
- » Environment & level design.

MODE: L4 HNC
FULL-TIME

DURATION
1 YEAR

MODE: L5 HND
FULL-TIME

DURATION
1 YEAR
(starting in
2021/22)

Cyber Security Technologist (L4)

Overview of the role:

The primary role of a Cyber Security Technologist is to apply an understanding of cyber threats, hazards, risks, controls, measures and mitigations to protect organisations systems and people.

Those focused on the technical side work on areas such as security design & architecture, security testing, investigations & response.

Those focussed on the risk analysis side focus on areas such as operations, risk, governance & compliance.

Whether focussed on the technical or risk analysis side, all people in this occupation work to achieve required security outcomes in a legal and regulatory context in all parts of the economy. They develop and apply practical knowledge of information security to deliver solutions that fulfil an organisation's requirements.

Entry requirements:

Individual employers will set the selection criteria, but this is likely to include A Levels, a relevant Level 3 apprenticeship, or other relevant qualifications, relevant experience and/or an aptitude test with a focus on functional maths. Apprentices require Level 2 English and maths or A-C, 4-9 GCSE or equivalent.

MODE
APPRENTICESHIP

DURATION
UP TO 24 MONTHS

(This does not include EPA period.)

ADDITIONAL INFORMATION:

This apprenticeship is recognised for entry to both IISP and BCS Associate Membership and for entry onto the Register of IT Technicians confirming SFIA level 3 professional competence.

Those completing the apprenticeship are eligible to apply for registration.

Digital Marketer (L4)

Overview of the role:

The primary role of a digital marketer is to define, design, build and implement digital campaigns across a variety of online and social media platforms to drive customer acquisition, customer engagement and customer retention.

A digital marketer will typically be working as part of a team; in which they will have responsibility for some of the straightforward elements of the overall marketing plan or campaign. The marketer will work to marketing briefs and instructions. They will normally report to a digital marketing manager, a marketing manager or an IT Manager.

Entry requirements:

Individual employers will identify any relevant entry requirements in terms of previous qualifications. Apprentices require Level 2 English and maths or A-C, 4-9 GCSE or equivalent.

MODE
APPRENTICESHIP

DURATION
UP TO 18 MONTHS

ADDITIONAL INFORMATION:

This apprenticeship is recognised for entry on to the Register of IT Technicians and those completing their apprenticeships are eligible to apply for registration.

Completion of the apprenticeship would also allow access to join as an Affiliate (Professional) member of the CIM (Chartered Institute of Marketing) and/or Associate membership of BCS.



Digital and Technology Solutions Professional Apprenticeship (L6)

Start dates from 2023/24

Overview of the role:

Creating digital and technology solutions that enable businesses to develop new products and services and increase productivity.

Typical job titles:

Software Developer, Software Engineer, Software Tester, Application Specialist, Business Analyst, IT project Manager, IT Consultant, Network Engineer, Cyber Security Analyst, Database Specialist, Data Analyst, Digital Media Technology Practitioner, Systems Designer.

MODE
APPRENTICESHIP

DURATION
TBC

ROAD MAP - CONSTRUCTION

Construction Full-Time & Part-Time Courses

LEVEL 3	LEVEL 4	LEVEL 5	LEVEL 6
<p>T Level Construction.*</p> <p>*to be developed for Y4.</p>	<p>Pearson BTEC Level 4 HNC in Construction and the Built Environment (Building Services Engineering) Y1</p> <p>Pearson BTEC Level 4 HNC in Construction and the Built Environment (Civil Engineering) Y1.</p>	<p>Pearson BTEC Level 5 HND in Construction and the Built Environment (Building Services Engineering) Y2</p> <p>Pearson BTEC Level 5 HND in Construction and the Built Environment (Civil Engineering) Y2.</p>	<p>Digital, Technology and Design Degree Top Up* Y3.</p> <p>*new bespoke Brunel University London Degree Top Up for all Level 5 IoT students.</p>

Construction Apprenticeships

LEVEL 3	LEVEL 4
<p>Plumbing and Domestic Heating Technician (L3)</p> <p>Building Services Design Technician (L3).</p>	<p>Construction Site Supervisor (L4).</p>





CONSTRUCTION

Pearson BTEC Level 4 HNC in Construction and the Built Environment (Building Services Engineering)

Mandatory core units:

- » Individual project (Pearson Set)
- » Construction technology
- » Science and materials
- » Construction practice and management.

Specialist units:

- » Mathematics for construction
- » Principles of heating services design and installation
- » Principles of ventilation and air-conditioning, design and installation.

Additional units:

- » Surveying, measuring and setting out.

MODE
FULL-TIME
PART-TIME

DURATION
FULL-TIME: 1 YEAR
PART-TIME: 2 YEARS

Pearson BTEC Level 4 HNC in Construction and the Built Environment (Civil Engineering)

Mandatory core units:

- » Individual project (Pearson Set)
- » Construction technology
- » Science and materials
- » Construction practice and management.

Specialist units:

- » Construction information (Drawing, detailing, specification)
- » Mathematics for construction
- » Principles of structural design
- » Surveying, measuring and setting out.

MODE
FULL-TIME
PART-TIME

DURATION
FULL-TIME: 1 YEAR
PART-TIME: 2 YEARS
(starts in 2021/22)

Pearson BTEC Level 5 HND in Construction and the Built Environment (Building Services Engineering)

Mandatory core units:

- » Group project (Pearson Set).

Specialist units:

- » Further mathematics for construction
- » Advanced heating, ventilation and air-conditioning, design and installation
- » Building management systems.

Additional units:

- » Alternative energy systems, design and installation
- » Alternative methods of construction
- » Advanced surveying and measurement.

MODE
FULL-TIME
PART-TIME

DURATION
FULL-TIME: 1 YEAR
PART-TIME: 2 YEARS
(starts in 2022/23)

Pearson BTEC Level 5 HND in Construction and the Built Environment (Civil Engineering)

Mandatory core units:

- » Group project (Pearson Set).

Specialist units:

- » Further mathematics for construction
- » Geotechnics and soil mechanics
- » Advanced structural design.

Additional units:

- » Building management systems
- » Alternative energy systems design and installation
- » Advanced surveying and measurement.

MODE
FULL-TIME
PART-TIME

DURATION
FULL-TIME: 1 YEAR
(starts in 2021/22)
PART-TIME: 2 YEARS
(starts in 2023/24)

Pearson BTEC Level 4 HNC in Construction and The Built Environment (Construction)

Mandatory core units:

- » Individual project (Pearson-set)
- » Construction technology
- » Science & materials
- » Construction practice & management.

Specialist units:

- » Legal and statutory responsibilities in
- » Construction information (Drawing, detailing, specification).

Additional units:

- » Surveying, measuring & setting out
- » Tender & procurement.

MODE
FULL-TIME
PART-TIME

DURATION
FULL-TIME: 1 YEAR
PART-TIME: 2 YEARS
(starts in 2021/22)



Plumbing and Domestic Heating Technician (L3)

Overview of the role:

Plumbing and domestic heating technicians plan, select, install, service, commission and maintain all aspects of plumbing and heating systems. Plumbing and domestic heating technicians can find themselves working inside or outside a property. Customer service skills and being tidy and respectful are important qualities as they can often find themselves working in customers' homes as well as on building sites.

As a competent plumbing and heating technician, the installation of plumbing and heating systems includes accurate measuring, marking, cutting, bending and jointing metallic and non-metallic pipework. Appliances and equipment can include gas, oil and solid fuel boilers as well as pumps, heat emitters, bathroom furniture or controls as part of a cold water, hot water, and central heating or above ground drainage and rainwater systems. Plumbing and domestic heating technicians are at the forefront of installing new and exciting environmental technologies like heat pumps, solar thermal systems, biomass boilers and water recycling systems. It is important for a plumbing and heating technician to be able to work independently or as a team and use their knowledge and skills to ensure that both the system and appliances are appropriately selected and correctly installed, often without any supervision, and done so in a safe, efficient and economical manner to minimise waste.

Entry requirements:

Individual employers will identify any relevant entry requirements in terms of previous qualifications. Apprentices require Level 2 English and maths or A-C, 4-9 GCSE or equivalent.

MODE
APPRENTICESHIP

DURATION
UP TO 48 MONTHS

Typical completion time is likely to be 48 months. This may reduce if an apprentice has gained previous relevant knowledge and skills, which is recognised as Accredited Prior Learning.

Links to Professional Registration.

By the end of this apprenticeship the candidate will have satisfied the requirements for registration as EngTech by the Engineering Council through The Chartered Institute of Plumbing and Heating Engineering (CIPHE) and or The Chartered Institute of Building Services Engineers (CIBSE).

On completion of the health and safety assessment, as determined, by the assessment plan the candidate will have satisfied the requirements to obtain a Construction Skills Certification Scheme (CSCS) Card through the Joint Industry Board for Plumbing and Mechanical Engineering Services (JIB-PMES) at the appropriate grade.

Additional information:

The plumbing and domestic heating apprenticeship standard provides the opportunity to learn and develop a range of knowledge, skills and behaviours including:

- » Understand installation and testing techniques for electrical components and control systems on plumbing and domestic heating systems
- » Understand the principles of selection, installation, testing, commissioning and service and maintenance techniques on domestic downstream natural gas pipework systems and appliances
- » Understand the principles of high quality customer service and establishing the needs of others (colleagues, customers and other stakeholders). Respect the working environment including customer's properties
- » Operate in a safe working manner by adhering to health and safety legislation, codes of practice and applying safe working practices
- » Apply installation and testing techniques for electrical components and control systems on plumbing and domestic heating systems
- » Select, install, test, commission, service and maintain domestic downstream natural gas pipework systems and appliances Work effectively and collaborate with colleagues, other trades, clients, suppliers and the public Be quality focussed in work and in personal standards Develop trust with customers and colleagues by undertaking responsibilities in an ethical and empathetic manner.



Building Services Design Technician (L3)

Overview of the role:

A Building Services Design Technician provides assistance to engineers and other construction professionals in the development of cost effective technical and sustainable design solutions involving the production of three dimensional models, calculations, specifications, reports and drawings taking into account, where appropriate, pre-fabrication techniques. Their work typically includes systems such as renewable technologies, heating, ventilation, air conditioning, drainage, lighting, power, controls and lifts. Buildings and infrastructure take on many forms from newly built facilities to the refurbishment of premises for every sector of industry. As Design Technicians they could be working under supervision in a design consultancy, a contractor or a manufacturing company.

A Design Technician's work could also involve:

- » Analysis - using appropriate software and simulation systems to solve technical problems
- » Project delivery - contributing to planning, managing work schedules, budgets and deadlines working as a member of a team
- » Site engineering - operating quality systems and health, safety and risk management procedures, progress monitoring, see that installations generally comply with the design intent, responding to site queries, commissioning and post occupancy evaluations.

Entry requirements:

Individual employers will identify any relevant entry requirements in terms of previous qualifications. Apprentices require on entry Level 2 English and maths or A-C, 4-9 GCSE or equivalent.

MODE
APPRENTICESHIP

DURATION
UP TO 36 MONTHS

The typical duration for this apprenticeship is 36 months but this will depend on the previous experience of the apprentice and access to opportunities to gain the full range of competence.

Construction Site Supervisor (L4)

Overview of the role:

This is a Level 4 Construction site supervisor apprenticeship. If required, the first year will include a Level 3 bridging course to prepare the apprentice for their HNC. The second and third years will include a HNC CBE (Construction management pathway) with specific units including:

- » Construction practice & management,
- » Legal and statutory responsibilities in construction
- » Construction technology and
- » Surveying, measuring & setting out.

A portfolio of evidence will also be progressed and developed throughout the practical period of the standard.

Apprentices will also complete an online portfolio of evidence which demonstrates that each of the knowledge, skills and behaviours in the Standard, have been met in readiness for the end point assessment. This online portfolio of evidence 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 (EPA).

Entry requirements:

Individual employers will determine their own entry requirements, but the typical entry requirements for this Apprenticeship will be five GCSEs. Apprentices require on entry Level 2 English and maths or A-C, 4-9 GCSE or equivalent.

MODE
APPRENTICESHIP

DURATION
UP TO 36 MONTHS

The typical duration for this Apprenticeship is three years but this will depend upon the previous experience of the apprentice and access to opportunities to gain the full range of competence.

(This does not include EPA period.)

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"These new Institutes of Technology will be the pinnacle of technical training – new collaborations between universities, colleges and business to make sure young people have the skills they need to build a well-paid rewarding career, while the economy gains the skilled workers it needs to be more productive."

"Institutes of Technology will help employers to get the skilled workforce they need, especially in much sought-after STEM skills and will offer young people a clear path to a great, well paid career."

Damian Hinds,
Education Secretary (at time of inception)



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