



# Electrical and Electronic Engineering

## The Work

Are you interested in training in practical skills at operator, craft or technician level in the Electrical or Electronic Engineering industry?

- **Electrical Engineering.** For example: electricity is generated in power stations and distributed through the national grid to sub-stations.
- **Electrical Contracting.** Wire and re-wire buildings and may service electrical appliances.
- **Electronic Engineering/Servicing.** Includes the assembly of circuitboards, repair of electronic appliances, (for example TVs), installing security and alarm systems.
- **Telecommunications.** Includes the installation, maintenance and repair of telephone systems, broadcasting equipment, aircraft electronics and radar and navigation equipment.
- **Microcomputer Technology.** Includes installation, maintenance and repair of computer systems.

Please also see No. 3 Building and Construction. See Work Matters for more labour market information (see page five - Easy ways to get useful information).

## What's Happening?

This sector is varied and diverse, ranging from the production of hi-tech electronic equipment and printing, to food production and clothing. There is a concentration of aerospace engineering and printing within the West of England area. Locally, 32,800 are employed in engineering and manufacturing. Employees in all science, engineering and technology occupations require a high level of numeracy due to the technical and mathematical basis of the jobs in the sector. The impact of technological change will increase the demand for professional and technical skills. Skill shortages remain across most engineering occupations. There will be an increased demand for more flexible, 'multi-skilled' workers, who have both electrical and mechanical engineering skills. Skills shortages within the industry are likely to become more severe in the next five to ten years if more young people do not enter the industry, as the current workforce is an ageing one.

## Possible Job Titles

- |  |                                   |  |
|--|-----------------------------------|--|
| <b>Computer Service Technician</b>     | <b>Gas Service Technician</b>     | <b>Domestic Appliance Service Technician</b> |
| <b>Electrical Engineer</b>             | <b>Meter Reader</b>               | <b>Telecommunications Technician</b>         |
| <b>Electricity Distribution Worker</b> | <b>Security Systems Installer</b> |  |
| <b>Electronics Engineer</b>            |                                   |  |

For information about these jobs see the Engineering section of the Connexions Resource Centre.

## Your Options at 16 and 17

- **Further education at school or college** – continue to study, full or part-time, for a career or keep your future options open and simply continue to improve your qualifications.
- **Apprenticeships** (Level 2)/Advanced Apprenticeships (Level 3) – learn new skills with an employer, gain qualifications and get some real work experience. You will receive a wage, or, if you are eligible, an Education Maintenance Allowance of up to £30 a week.
- **Job** – regular, paid work that, with training, can lead to recognised qualifications.
- **e2e** (Entry to Employment) & **Pre-e2e** – programmes to help you prepare for a job, an Apprenticeship or further education.

For details of all these options speak to your Connexions personal adviser or see page five – Easy ways to get useful information.

## Section 1

### Further education: what's available locally and how to apply.

- This sheet lists full-time vocational courses. Other courses and ways of learning may be available.
- [Futures4Me](#) – explore all post-16 learning and training opportunities available in the West of England.
- Contact colleges/sixth form colleges for information and an application form. They all have websites.
- Go to open evenings and information events. See page five – Easy ways to get useful information.
- Ask colleges/sixth form colleges how well previous students have done on their courses.
- Use your school's Connexions Information Centre for information about local colleges and sixth forms.
- Higher education, Apprenticeships, a job with training, self-employment or time out to travel or do voluntary work are all options after college/sixth form college.
- Education Maintenance Allowance (EMA) is a weekly payment to help with costs if you go into the sixth form, college or go into training. Other financial support exists to help with travel, specialist courses, books and equipment and childcare. Terms and conditions apply to all. For more information - <http://moneytolearn.direct.gov.uk>

#### CITY OF BATH COLLEGE

Avon Street, Bath BA1 1UP

Tel: 01225 312191

Website: [www.cityofbathcoll.ac.uk](http://www.cityofbathcoll.ac.uk)

#### Engineering – Manufacturing – First Diploma

(1 year). Entry requirements are 3 GCSEs grade D or above including English, Maths and Science. This course is an ideal introduction for school leavers who wish to take up a career in manufacturing engineering.

#### Engineering – Manufacturing – National Diploma

(2 years). Entry requirements are 3 GCSE grade C or above including English, Maths and Science. This course covers the principles and applications of mechanical engineering, hydraulics, pneumatics, fabrication and welding.

#### Performing Engineering Operations – NVQ 2 Electrical Engineering

(1 year). Entry requirements are 3 GCSEs grade C or above in English, Maths and Science. You will be asked to attend a briefing session with the programme leader and will be required to undertake a college entrance test. Students will practice and develop a range of skills relating to electrical installation through hands-on practical experience.

#### CITY OF BRISTOL COLLEGE – ASHLEY DOWN CENTRE

Faculty of Engineering, Ashley Down Road, Bristol BS7 9BU

Tel: 0117 312 5000

Website: [www.cityofbristol.ac.uk](http://www.cityofbristol.ac.uk)

#### Introduction to Electrical Installation – Performing Engineering Operations (PEO) 1

(1 year). No formal entry qualifications required. You will need a keen interest in electrical work along with the motivation and desire to succeed as well as coming to a personal interview. If you're looking to break into the electrical trades then this course is the place to start. This course is hands-on and most of your time will be spent in our workshops where you'll gain a broad range of electrical skills.

#### Engineering Practical Skills Training Level 1

(1 year). Entry requirements are GCSEs grade C or above to include English, Maths and Science and a personal interview. If you're looking to break into the mechanical or electrical trades then this course is the place to start. The course is hands-on and most of your time will be spent in our workshops where you'll gain a broad range of skills. Part of the course includes the opportunity to gain qualifications in Key Skills.

#### Performing Engineering Operations – Performing Engineering Operations (PEO) 2

(1 year). Entry requirements are 3 GCSEs grade D or above (including English, Maths and Science) or Performing Engineering Operations Level 1 qualification. You will also need a personal interview and aptitude test. This course is ideal for those interested in a career in the Mechanical/Electrical industries. You will be trained in the practical hands-on skills needed to meet the demands of the engineering industry, as well as developing knowledge in areas such as Computing and Key Skills.

#### Electrical Installation – City and Guilds 2330

(1 year). Entry requirements are a minimum of 3 GCSEs grade D or above including English, Maths and Science. If you're looking to follow a career in the electrical contracting industry this course is ideal. You will receive training in all the basic practical skills and learn all about the technology needed to meet the demands of both the domestic and industrial markets.

**FILTON COLLEGE**

Filton Avenue, Filton, Bristol BS34 7AT

Tel: 0117 931 2121

Website: [www.filton.ac.uk](http://www.filton.ac.uk)**Aerospace Engineering National Diploma**

(2 years) Entry requirements are 4 GCSEs in Maths, English, Science and 1 other at C or above, or a First Diploma in Engineering, or an intermediate GNVQ in Engineering or Manufacturing. However, qualifications below these will be considered for entry on an individual basis. A practical and written skills test will be taken.

**Diploma in Engineering Level 2**

(1 year). Entry requirements are 3 GCSEs minimum grade D in Maths and English. A practical and written skills test will be taken.

**Engineering – First Diploma**

(1 year). Entry requirements are 4 GCSEs in Maths, English, Science and 1 other at D or E level or an Introductory Certificate in Engineering. However, qualifications below these will be considered for entry on an individual basis. A practical and written skills test will be taken.

**Electro Technical Certificate City & Guilds 2330 in Electrics – Level 2**

(1 year). Entry requirements are 4 GCSEs grade A - D to include Maths and English or Merit pass in Level 2 course in a related subject plus college skills test.

**Electrical – C&G 2330 Level 3**

(1 year). Students wishing to undertake the Level 3 City and Guilds 2330 Electrical Installation Technical Certificate, must have successfully completed the Level 2 certificate of the same course.

**WESTON COLLEGE**

Knightstone Road, Weston-super-Mare BS23 2AL

Tel: 01934 411411

Website: [www.weston.ac.uk](http://www.weston.ac.uk)**Electrotechnical Technology (Electrical Installation) – City & Guilds 2330**

(1 Year). Entry requirements are 4 GCSEs grades C - E (to include English Language, Maths and Science at grade D or above). You will also need to have a course guidance interview and successfully complete an initial assessment test.

**Engineering (Electronics) – BTEC First Diploma**

(1 Year). Entry requirements are 4 GCSEs grades C - E (including English Language, Maths and Science). You must also be able to demonstrate an interest in the subject and a willingness to study this course. You will also need to have a course guidance interview and successfully complete an initial assessment test.

**Engineering – Higher Diploma**

(1 Year). Entry requirements are 4 GCSEs grades C - E, preferably to include English Language and Maths at grade C or above.

**Engineering – Advanced Diploma**

(2 Years). Entry requirements are 5 GCSEs grades A - C including English Language and Maths at grade C or above. Alternatively you will need an appropriate Level 2 qualification accompanied by GCSEs in Maths and English Language grades A - C or equivalent (e.g. Key Skills Level 2 in Communication and Application of Number).

**Performing Engineering Operations (Electrical/Electronics) – Level 1**

(1 Year). Entry requirements are some GCSEs grades C - E and you must be able to demonstrate an interest in the subject and a willingness to study this course. You will also need to have a course guidance interview and successfully complete an initial assessment test.

**Performing Engineering Operations (Electrical/Electronics) – Level 2**

(1 Year). Entry requirements are 4 GCSEs grades C - E (to include English Language and Maths). It would also be an advantage if you have a GCSE in Science. You must be able to demonstrate an interest in the subject and a willingness to learn. You will also need to have a course guidance interview and successfully complete an initial assessment test.

## Section 2

### Year 12 (Sixth Form)

- Choose from a wide range of courses including AS/A2 Levels, GCSEs, Diplomas, National Diplomas, NVQs and other work related courses.
- Contact sixth forms for information and an application form. They all have websites.
- Go to open evenings and information events. See page five – Easy ways to get useful information.
- Ask sixth forms how well previous students have done on their courses.
- Use your school's Connexions Information Centre for information about local sixth forms.
- Additional further education, higher education, Apprenticeships, a job with training, self-employment or time out to travel or do voluntary work are all options after the sixth form.
- Educational Maintenance Allowance is a weekly payment to help you continue to learn or train. EMA is worth up to £30 a week. Other financial support exists to help with travel, specialist courses, books and equipment and childcare. Terms and conditions apply to all. For more information – <http://moneytolearn.direct.gov.uk>

## Section 3

### Apprenticeships and Jobs

Both of these options allow you to learn new skills with an employer and get some real work experience – but only an Apprenticeship will guarantee you training and the chance to gain qualifications. You will receive a wage, or, if you are eligible, an Education Maintenance Allowance of up to £30 a week. See page five – Easy ways to get useful information.

### Local Apprenticeships

#### Electrical Installation

- **City of Bristol College**, College Green Centre, St Georges Road, Bristol BS1 5UA. 0117 312 5007. Claire Arbery. [claire.arbery@cityofbristol.ac.uk](mailto:claire.arbery@cityofbristol.ac.uk)
- **Weston College**, Knightstone Road, Weston-super-Mare, North Somerset BS23 2AL. 01934 411411. Peggy Tovey. [peggy.tovey@weston.ac.uk](mailto:peggy.tovey@weston.ac.uk)

#### Electrotechnical

- **Bristol City Council (On-site)**, AvonQuay, Cumberland Basin, Bristol BS1 6XL. 0117 353 3480. Darren Perkins. [darren.perkins@bristol.gov.uk](mailto:darren.perkins@bristol.gov.uk)

#### Engineering

- **Avon Vale Training**, Avon Vale House, Cocklebury Road, Chippenham, Wiltshire SN15 3QH. 01249 665911. Steve Gale. [stevegale@avonvale.co.uk](mailto:stevegale@avonvale.co.uk)
- **City of Bristol College**, College Green Centre, St Georges Road, Bristol BS1 5UA. 0117 312 5007. Claire Arbery. [claire.arbery@cityofbristol.ac.uk](mailto:claire.arbery@cityofbristol.ac.uk)
- **Rolls Royce**, PO Box 31, Filton, Bristol BS34 7QE. 0117 979 7760. Ian Featherstone. [ian.featherstone@rolls-royce.com](mailto:ian.featherstone@rolls-royce.com)

### Local Advanced Apprenticeships

#### Electrical Installation

- **Weston College**, Knightstone Road, Weston-super-Mare, North Somerset BS23 2AL. 01934 411411. Peggy Tovey. [peggy.tovey@weston.ac.uk](mailto:peggy.tovey@weston.ac.uk)

#### Electrotechnical

- **Bristol City Council (On-site)**, AvonQuay, Cumberland Basin, Bristol BS1 6XL. 0117 353 3480. Darren Perkins. [darren.perkins@bristol.gov.uk](mailto:darren.perkins@bristol.gov.uk)

#### Engineering

- **Avon Vale Training**, Avon Vale House, Cocklebury Road, Chippenham, Wiltshire SN15 3QH. 01249 665911. Steve Gale. [stevegale@avonvale.co.uk](mailto:stevegale@avonvale.co.uk)
- **City of Bristol College**, College Green Centre, St Georges Road, Bristol BS1 5UA. 0117 312 5007. Claire Arbery. [claire.arbery@cityofbristol.ac.uk](mailto:claire.arbery@cityofbristol.ac.uk)

- **Rolls Royce**, PO Box 31, Filton, Bristol BS34 7QE. 0117 979 7760. Ian Featherstone. [ian.featherstone@rolls-royce.com](mailto:ian.featherstone@rolls-royce.com)

The following have recruited and/or offered training for school and college leavers in the past.

- **Avon Vale Training Ltd**, Avon Vale House, Cocklebury Road, Chippenham, Wiltshire, SN15 3QH. 01249 661199.
- **N.G. Bailey**, Causeway House, Fishponds, Lodge Causeway, Bristol BS16 3HD. Tel: 0113 234 3443. [www.ngbailey.co.uk](http://www.ngbailey.co.uk)
- **Rolls Royce plc**, P.O. Box 3, Filton, Bristol BS34 7QE. 0117 979 7760. [www.rollsroyce.com](http://www.rollsroyce.com) (search under Careers - Apprenticeships).
- **Rotork Controls Ltd**, Brassmill Lane, Bath BA1 3JQ. 01225 733200. [jo.drake@rotork.co.uk](mailto:jo.drake@rotork.co.uk)

## For more on Apprenticeships

- [www.apprenticeships.org.uk](http://www.apprenticeships.org.uk) – visit the National Apprenticeship website for information including the National Apprenticeship Vacancy Matching Service (scroll down and click on the 'Apprenticeship Vacancies' link). This service lets you search for Apprenticeship vacancies in a variety of ways, such as by occupational area, provider or by postcode.
- **08000 150 600** – Call the National Apprenticeship Hotline for help and advice.
- If you are still not sure and need help, please contact careers staff in your school/college or your local Connexions West of England Centre (addresses at end of this leaflet).

## Time Off for study or training

- The right to Time Off for Study or training is designed to help you if you are aged 16-17, got few if any qualifications at school, and are now employed in a job which offers little or no training.
- For more information – [www.connexions-direct.com](http://www.connexions-direct.com) – look under work schemes>time off for study and training.

## Easy ways to get useful information

- [www.connexionswest.org.uk](http://www.connexionswest.org.uk) – information for 13-19 year olds; vacancies; local support agencies; education & training database; publication downloads.
- <http://options.connexionswest.org.uk> – Your Way Forward - Options @ 16 and 17. Post-16 learning, training and work options; qualifications; sources of finance; useful websites.
- <http://workmatters.connexionswest.org.uk> – Information about working in the local area; how much people earn; number of people employed; types of jobs; useful websites.
- **Futures4Me** – explore all post-16 learning and training opportunities available in the West of England.

### Connexions West of England Centres are open Monday – Friday. Contact direct for opening hours.

<b>Bristol</b> 4 Colston Avenue Bristol BS1 4ST Tel: 0117 987 3700 Fax: 0117 987 3701 Minicom: 0117 907 4514	<b>Bath &amp; North East Somerset</b> 28 Southgate Bath BA1 1TP Tel: 01225 461 501 Fax: 01225 465 619	<b>South Gloucestershire</b> 21-23 High Street Kingswood Bristol BS15 4AA Tel: 0117 961 2760 Fax: 0117 960 7838	<b>South Gloucestershire</b> 28 Gloucester Rd North Filton Bristol BS7 0SJ Tel: 0117 969 8101 Fax: 0117 931 2978	<b>North Somerset</b> 45 Boulevard Weston-super-Mare BS23 1PG Tel: 01934 644443 Fax: 01934 644409
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[www.connexionswest.org.uk](http://www.connexionswest.org.uk)  
[enquiries@connexionswest.org.uk](mailto:enquiries@connexionswest.org.uk)

**Connexions Direct** (confidential information, advice and support for young people)  
Tel: 080 800 13 2 19. Text: 07766 4 13 2 19. [www.connexions-direct.com](http://www.connexions-direct.com)

The information in this leaflet was correct at the time of writing. Please check details - information dates quickly.

Produced by Red Bridge Solutions Ltd - [enquiries@redbridgesolutions.co.uk](mailto:enquiries@redbridgesolutions.co.uk)