



Mechanical Engineering

The Work

Mechanical Engineering is concerned with the design, development, manufacture, operation and maintenance of many types of plant, machinery and mechanical products. You can get into mechanical engineering at different levels; operative, craft, technician and professional. Some of these will require additional qualifications or training.

Also see Information Sheets No. 8 Garage Work, Mechanics and Agricultural Engineering and No. 3 Building and Construction.

What's Happening?

The engineering and manufacturing sectors are varied and diverse, ranging from the production of hi-tech electronic equipment and printing to food production and clothing. Locally, 32,800 are employed in engineering and manufacturing. There is a concentration of aerospace engineering and printing within the West of England area. (For example, Rolls Royce at Filton). Employment in lower skilled manufacturing has declined in recent years, and the impact of technological change will increase the demand for professional and technical skills. There will be a greater need for more flexible, 'multi-skilled' workers, who have both electrical and mechanical engineering skills. While the immediate future is uncertain due to the current economic downturn it is likely that skill shortages will remain across most engineering occupations.

See Work Matters for more labour market information (see page six - Easy ways to get useful information).

Possible Job Titles

Aerospace Engineer
Aerospace Engineering Technician
Chemical Engineer
Civil Engineer
Electrician

Engineering Craft/CNC Machinist
Gas Service Technician
Mechanical Engineer
Mechanical Engineering Technician
Merchant Navy Engineering Officer

For information on jobs and others in mechanical engineering see the **Engineering** section of the Connexions Resource Library.

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 six – 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 six – 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

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 GCSEs 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

Ashley Down Road, Bristol BS7 9BU

Tel: 0117 312 5000

Website: www.cityofbristol.ac.uk

Engineering Practical Skills Training Level 1

(1 year). Entry requirements are ideally GCSE passes in 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 – PEO 2

(1 year) Entry requirements are 3 GCSEs grade D or above (including English, Maths and Science) or the 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.

Engineering – BTEC First Diploma.

(1 year). Entry requirements are 3 GCSEs grade D or above to include English, Maths and Science or Performing Engineering Operations NVQ 1. If you're looking for an introduction to engineering this course is a good starting point.

Engineering – Edexcel National Diploma

(2 years). Entry requirements are 4 GCSEs grade C or above to include English, Maths and Science or the equivalent Key Skills Literacy or Numeracy qualification. On this course you will gain an excellent understanding of all that engineering involves by covering a wide range of subjects.

Engineering – Level 3 Diploma

(2 years). Entry requirements are 5 GCSEs grade C or above (including Maths, English and Science) or

BTEC First Diploma at Merit grade, or equivalent qualifications. The Diploma in Engineering at Level 3 will provide a programme of applied and general learning related to the engineering industries. The learning will be broad-based and will include generic engineering concepts that underpin all engineering sectors.

Manufacturing and Product Design – Level 3 Diploma

(2 years). Entry requirements are 5 GCSEs grade C or above (including Maths, English and Science) or BTEC First Diploma at Merit grade, or equivalent qualifications. This course is built around the themes of business and enterprise, product design, materials sciences and production systems.

CITY OF BRISTOL COLLEGE – PARKWAY TRANSPORT TECHNOLOGY CENTRE

New Road, Stoke Gifford, Bristol BS34 8SF

Tel: 0117 312 5000

Website: www.cityofbristol.ac.uk

Aircraft Maintenance Engineer's Licence – EASA Part 66 B1 or B2 (Aircraft Mechanical or Avionic Systems) Level 3

(2 years). Entry requirements are 4 GCSEs grade C or above (including Maths, English and Science).

This course meets the EASA requirements for the Basic Training Certificate and you will have the choice of Mechanical or Avionic Systems.

Aerospace Engineering – BTEC National Diploma

(2 years). Entry requirements are 4 GCSEs grade C or above (to include Maths and Science) or a BTEC First Diploma or equivalent. The course will allow you to explore the current practices in the airline maintenance industry as well as building skills and knowledge in the rapidly developing technologies of aviation. The course will include some practical experience working on the college's aircraft at Parkway Centre and Staverton Airport.

FILTON COLLEGE

Filton Avenue, Filton, Bristol BS34 7AT

Tel: 0117 931 2121

Website: 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, 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.

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.

Engineering Diploma 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.

NORTON RADSTOCK COLLEGE

South Hill Park, Radstock, Bath, Bath & NE Somerset BA3 3RW

Tel: 01761 433161

Website: www.nortcoll.ac.uk

BTEC National Award in Mechanical Engineering

(1 year). Entry requirements are 3 GCSEs at grade D or above including English, Maths and Science. This course is equivalent to one A Level.

BTEC National Certificate in Mechanical Engineering

(1- 2 years). Entry requirements are completion of National Award or 4 GCSEs at grade C and above. (This qualification is equivalent to 2 A Levels). This builds on and expands your knowledge of the engineering world.

BTEC National Diploma in Mechanical Engineering

(1- 2 years). Entry requirements are completion of National Certificate or 5 GCSEs at grade C and above. (This qualification is equivalent to 3 A Levels). This builds on and expands your knowledge of the engineering world.

Performing Engineering Operations – Level 1

(1 year). Entry requirements are a successful interview and linked assessment. This course provides you with the basic knowledge of both engineering and welding processes, you will also gain key skills during training.

Performing Engineering Operations Level 2/NVQ Intermediate Multi Skills

(1 year). Entry requirements are completion of Level 1 PEO or equivalent, plus an interview and initial assessment test, this course is ideal for a future within the engineering world. Part of this course includes Key Skills level.

Performing Engineering Operations, City & Guilds 2800, Level 3

(1 year). Entry requirements are a successful interview and relevant experience, or Level 2 PEO (Performing Engineering Operations). Students can follow a variety of units, e.g. Machining, Welding, Fabrication, CAD etc. combined with health and safety, personal and social skills and a variety of other supporting subjects.

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 six – 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 six – Easy ways to get useful information.

Local Apprenticeships**Aeronautical Engineering**

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

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
- **Weston College**, Knightstone Road, Weston-super-Mare, North Somerset BS23 2AL. 01934 411411. Peggy Tovey. 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

Engineering

- **Avon Vale Training**, Avon Vale House, Cocklebury Road, Chippenham, Wiltshire SN15 3QH. 01249 665911. Steve Gale. 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
- **Rolls Royce**, PO Box 31, Filton, Bristol BS34 7QE. 0117 979 7760. Ian Featherstone. ian.featherstone@rolls-royce.com

Engineering Manufacturing Technology

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

Industrial Applications

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

Production of Glass Supporting Fabrications

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

Local Advanced Apprenticeships

Aeronautical Engineering

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

Electrical Installation

- **Weston College**, Knightstone Road, Weston-super-Mare, North Somerset BS23 2AL. 01934 411411. Peggy Tovey. 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

Engineering

- **Avon Vale Training**, Avon Vale House, Cocklebury Road, Chippenham, Wiltshire SN15 3QH. 01249 665911. Steve Gale. 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
- **Rolls Royce**, PO Box 31, Filton, Bristol BS34 7QE. 0117 979 7760. Ian Featherstone. ian.featherstone@rolls-royce.com

Engineering Manufacturing Technology

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

Industrial Applications

- **Avon Vale Training**, Avon Vale House, Cocklebury Road, Chippenham, Wiltshire SN15 3QH. 01249 665911. Steve Gale. stevegale@avonvale.co.uk
- **Rolls Royce**, PO Box 31, Filton, Bristol BS34 7QE. 0117 979 7760. Ian Featherstone. ian.featherstone@rolls-royce.com

Production of Glass Supporting Fabrications

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

For more on Apprenticeships

- 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 – look under work schemes>time off for study and training.

Easy ways to get useful information

- 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.

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

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

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