



Engineering

(Including Motor Vehicle Engineering)

Job Information Sheet

What is engineering?

Engineering is the process of designing, making and maintaining the machinery of everyday life. It is not only about spanners, sprockets and springs; it is also about, trains, TVs, camcorders, CDs and all the things that we use on a daily basis. Engineers make the equipment that produces and packages most of the items we eat, drink and wear. They help in the construction of bridges, in the design and maintenance of the buildings in which we work and the roads we use to get there.

Motor vehicle engineering covers assembly and finishing, maintaining and repairing all kinds of cars, vans and heavy vehicles. The motor vehicle industry is an important part of the UK economy. There are over 28 million vehicles on British roads, all of which need regular maintenance and repair.

The traditional image of the 'mechanic' may be of overalls, a spanner and grease but this industry is one of the most qualified in the country. The increasing complexity of vehicles has seen the work of technicians change, with a greater emphasis now placed on electrical fault-finding and less on mechanical repair.

Wherever they work, there are different levels of engineers. **Incorporated or chartered engineers** normally have more overall responsibility for complex activities. They may also be team leaders. **Technicians** work under the guidance of incorporated engineers or chartered engineers when carrying out essential skilled tasks. **Craftspeople** work in many aspects of engineering. They follow engineering drawings to turn the design into a product. **Operators** use machinery or are involved in assembling products.

Are there jobs for 16-19 year olds?

To be an incorporated or chartered engineer you need to study at university. However, there are many jobs in engineering that do not require a degree or diploma. Below is a selection of jobs that could be available to 16-19 year olds living in Central London. Further details of these and many other jobs can be found at www.connexions-direct.com/jobs4u/.

There are many positions available within the engineering sector, from rail transport, gas and water supply, car dealerships to bus companies. Many of these include apprenticeships as part of the package, and require a commitment to train over a number of years.

Some of these will not ask for any qualifications but most will ask for good GCSEs including English, maths and science or relevant vocational college courses. For some higher level technician training A levels or equivalent qualifications are often an advantage.

This information sheet covers jobs for 16-19 year olds in Central London. It does not cover graduate jobs or jobs that are rare in Central London. For details of the whole range of jobs in the construction industry go to www.connexions-direct.com/jobs4u/.

Vacancies for electricians (who install, test and inspect wiring systems and electrical equipment) are covered in the Construction Job Information Sheet and vacancies for computer and telecommunications technicians are covered in the Computing & ICT Job Information Sheet.

Jobs for 16-19 year olds in engineering

- **Clinical engineers** design, build and test equipment used for the diagnosis, treatment and monitoring of patients.
- **Electricity generation workers** deal with the machinery for generating electricity – turbines, generators, and electronic control equipment.
- **Electrical engineering technicians** install and test wiring systems or electrical equipment used in manufacturing or engineering.
- **Electronic engineering technicians** and **craftspeople** may design printed circuit boards, help with designing and testing new equipment or help to plan and install production control systems.
- **Gas distribution workers** put in gas distribution mains pipes and the pipes that connect customers' premises to the mains.
- **Gas service technicians** install gas and service appliances, such as fires, boilers, cookers and so on, in customers' homes and business premises.
- **Railway fitters and electricians** service the 'traction units' that pull trains, carriages and wagons. Some also build new traction units and carriages, or look after machinery such as cranes and lifts.
- **Security systems installers** fit, test and maintain electronic systems to detect intruders.
- **Satellite systems technicians** install and repair telecommunications equipment and satellite dishes.
- **Signalling technicians** work on railway signalling and control systems, which involve complex mechanical, electrical, electronic and computerised technology.
- **Domestic appliance service** people work in people's homes, or in workshops, servicing and repairing all the different kinds of machinery and equipment used at home, from washing machines to microwaves, cookers to vacuum cleaners.
- **Engineering operatives** are involved in production in any area of engineering. They usually work on a production line.
- **Locksmiths** sell, install and maintain locks and other security devices such as safes, CCTV and push button or swipe card door entry systems. They also replace lost keys and repair damaged security systems.
- **Office machinery service** people service and maintain office equipment, such as photocopiers and fax machines.
- **Welders** join pieces of metal together using intense heat to melt the edges, which fuse together as one piece as it cools.
- **Auto electricians** use different kinds of testing equipment to find electrical faults in motor vehicles. They then repair the fault, fitting new electrical or electronic parts if needed.
- **Construction plant mechanics** service and repair machinery such as excavators, bulldozers, cranes and dump trucks, usually on site.
- **Motor vehicle body repairers**, builders and refinishers repair the bodywork on damaged vehicles. This can involve straightening the chassis, filling or hammering out dents or replacing panels, and repainting.
- **Motor vehicle technicians** repair and maintain vehicles, either for members of the public or for organisations. They generally specialise in cars and vans, heavy vehicles or motorcycles. Some work as auto electricians.
- **Paint sprayers** use a spray gun or a large machine to apply paint and other coatings.
- **Parts People** or vehicle parts operatives sell motor parts and accessories to vehicle technicians and the public. They often need to obtain information on the availability and cost of components and present this information to customers.
- **Tyre and exhaust fitters** repair or replace worn or damaged tyres or exhaust systems on any kind of vehicle. Some fitters deal with both tyres and exhausts; others specialise in just one.

Live Engineering Vacancies (on 1st May 2009)

Young people in Central London can search for job and training opportunities at www.lois.net.uk. When this information sheet was published the following vacancies were available:

LOIS Ref	Vacancy	Organisation	Location	Notes
L19000901 L19000903 L19000904	Motor Vehicle Service Apprentice	Motor Vehicle Dealership	Marble Arch, Ladbroke Grove & Highgate	4 GCSE grades A*-C including English, maths and science or equivalent
L19000905 L19000906 L19000907	Motor Vehicle Parts Apprentice	Motor Vehicle Dealership	Marble Arch, Ladbroke Grove & Highgate	3 GCSE grades A*-D including English, maths and science or equivalent
L19000908 L19000909	Motor Vehicle Parts Apprentice	Motor Vehicle Dealership	Ladbroke Grove & Highgate	3 GCSE grades A*-D including English, maths and science or equivalent
L19001176	Motorcycle Apprentice	Motor Vehicle Dealership	Marble Arch	4 GCSE grades A*-C including English, maths and science or equivalent
L19001353	Engineering Advanced Apprenticeship	Rail Transport	Euston	4 GCSE grades A*-C including English, maths and science
L19001358 L19001359 L19001360 L19001361 L19001362 L19001363 L19001364	Engineering, Signal Technician, Train Maintenance, Track technician, Workshop/Plant, Escalator And Signal Design Apprenticeships	Underground Transport	Throughout Central London	GCSE grades A*-C including English, maths and science
L19001373	Trainee Fire & Security Systems Engineer	Fire & Security Systems	Aldgate/ Liverpool Street	GCSE grades A*-C in English, maths, IT and a science subject
L19001378	Automotive Apprentices	Motor Vehicle Dealership	Camden	3 GCSE grades A*-D including English, maths and ICT
L27001658	Metalwork Apprenticeship	Specialist Design & Manufacture	Stratford	4 GCSE grades A*-C including maths and English or equivalent
L27001660	Plastics Processing Apprentice	Specialist Design & Manufacture	Stratford	4 GCSE grades A*-C including maths and English or equivalent
L27001671 L27001672 L27001673 L27001674 L27001675	Depot, Workshop, Track & Civil, Non Destructive Testing and Fleet Maintenance Apprenticeships	Rail Transport	Throughout London	5 GCSE grades A*-C including maths, English and science

L18000074	Vehicle Parts Operative	Car Manufacturer	Throughout London	3 GCSEs grades A*-C including maths and English
L18000077	Heavy Vehicle Apprenticeship	Trucks	Throughout London	3 GCSE grades A*-C
L18000135	Engineering Apprenticeship	Airport Operator	Throughout London	4 GCSE grades A*-C including maths, English, science and IT or CDT or equivalent *Closing date 10 th April*
L12000883	Motor Vehicle Apprenticeship	Motor Vehicle Dealership	Croydon	
L12001293	Engineering Apprentice	Aircraft Repair	Hayes	5 GCSE grades A*-B including maths, English and science
L12001394	Escalator & Pumps Apprentice	Rail Transport	Acton	5 GCSE grades A*-C including maths, English and science or equivalent
L12001316	Paint and Refinishing Apprenticeship	Motor Vehicle	Croydon	
L12000406 L12000407 L12001424 L12001425 L12001433 L12001434	Track/Civil, REW Workshop, NDT Workshop, Escalator & Pump, Fleet Maintenance & CNC Machinist Engineering	Rail Transport	Acton	5 GCSE grades A*-C including English, maths and science
L12001426	Service Technician Apprenticeship	Motor Vehicle Dealership	Croydon	
L12001490	Apprentice Service Technician	Motor Vehicle Dealership	Croydon	GCSE grades A*-C in English and maths preferred

To find out more about any of these vacancies either speak to your Personal Adviser or contact the nearest centre listed at the bottom of this page. If you do not live in any of the areas listed below you can find your local Connexions centre at:

www.connexions-direct.com/index.cfm?go=localServices

Apprenticeships

Apprenticeships offer training to young people who want to learn while working. Employers will usually ask for at least GCSE A*-C, in order to be sure that applicants will be able to cope with apprenticeship training.

Many apprenticeships are listed in the 'live' vacancies above. In addition the following companies are likely to recruit apprentices every summer (you can apply to all of these online):

- **Rolls-Royce** (www.rolls-royce.com/careers/uk/apprentices/ama/default.jsp) has Engineering Apprenticeships in Aero Engine, Modeller, Technical Author, Machinist, Mechatronics, Lab Technician & Manufacturing. They have no apprenticeships in London but they will consider applicants who are willing to relocate (they can offer advice about accommodation).
- **Kwik-Fit** (www.kwik-fit.com/hr-recruitment.asp) have vehicle fitting apprenticeships in most parts of London. GCSE grades A*-D are preferred, but not essential.

A College or 6th form course?

For engineering careers staying on in full-time education can be a good option but for others the best option is to find an employer and attend college part-time.

If you intend to study at university or enter higher level technician training then taking A Levels in such subjects as maths, sciences or electronics are a good option. Vocational courses, such as BTEC National Diploma can also be a good choice. You normally need at least four GCSEs at grades A*-C or equivalent to enter these courses.

Some colleges also offer foundation level courses in electronics or engineering for students without good GCSEs. These foundation or level 1 courses can lead on to level 2, Intermediate or First Diploma courses that are equivalent to the 4 or 5 GCSE A-C grades many employers ask for

Diplomas

The Diploma is a new qualification that combines classroom study with practical experience. Diplomas will be available at Foundation, Higher and Advanced Levels in many colleges and 6th forms and, in some cases, may replace other vocational courses.

The Engineering Diploma will be introduced in Lambeth, Southwark and some other parts of London from September 2008.

For details on the vast range of education and training courses, including Diplomas, on offer throughout London go to www.mychoicelondon.gov.uk/choice