

# **Unit 11: Starting Work in Engineering**

**Unit reference number: L/503/3425**

**QCF level: 1**

**Credit value: 4**

**Guided learning hours: 40**

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## **Unit aim**

This unit introduces learners to career opportunities in engineering and the organisations that provide these opportunities. It encourages learners to make informed choices about their potential career options.

## **Unit introduction**

This unit introduces learners to the different specialist areas that make up the engineering sector and helps learners identify the various careers available in each of these specialist areas, at all levels.

Learners will have the opportunity to explore the different types of organisation that operate within the engineering sector in terms of their size and the type of work they undertake. Learners will use this information to make decisions concerning possible career choices in engineering, and to reflect on the effect of these choices on their preferred lifestyle.

Although learners will work independently when making decisions about their career options, they will also function as effective members of a team by working responsibly and cooperatively with others.

When preparing for work in the engineering industry it is important that learners are able to seek, and respond to, guidance from colleagues and tutors during the learning process. This unit will help learners to develop an understanding of the personal qualities that employers value.

## **Essential resources**

People working in the engineering sector are likely to be a very useful resource to motivate and inspire learners. Centres are encouraged to invite external speakers to talk about their experiences of companies and work. Paper-based information such as directories of organisations, job descriptions and job adverts from newspapers are all sources of useful information for learners.

## Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria		Unit amplification
1	Know about the different types of career opportunities available in engineering	1.1	Describe the different types of career opportunities in engineering	<ul style="list-style-type: none"> <li>□ <i>Types of career opportunity:</i> fulltime or part-time; employed or self-employed; permanent or temporary; professional and technical eg design engineer, production management, development engineer, maintenance management, facilities management; craft or operative eg machinist, fitter, CAD operator; skilled or unskilled</li> </ul>
2	Know about the different types of organisation offering career opportunities in engineering	2.1	Describe the different types of organisation that offer career opportunities in engineering in terms of their size and the nature of the work they undertake	<ul style="list-style-type: none"> <li>□ <i>Types:</i> small businesses eg start-up companies, sole traders; large privately or publicly owned organisations eg partnerships, limited companies/PLCs, multi-nationals</li> <li>□ <i>Work undertaken:</i> manufacturing, servicing, contractors eg private businesses and public sector</li> </ul>
3	Understand how career choices can impact on an individual's lifestyle	3.1	Explain how an individual's lifestyle may be influenced by their career choices they make	<ul style="list-style-type: none"> <li>□ <i>Lifestyle issues:</i> ambitions and aspirations; job satisfaction; sense of identity; financial and social benefits</li> <li>□ <i>Impact of career choice:</i> requirements eg education, training and development, robust mental and physical health; conditions of work eg hard work, tight deadlines, working away from home or abroad, weekend working, flexitime, long hours of work, time spent travelling to work; impact eg effect on family life, social life and personal relationships, stress levels, mental and physical demands</li> </ul>

Learning outcomes		Assessment criteria		Unit amplification
4	Be able to make informed career choices	4.1	Make realistic career choices based on provided information	<ul style="list-style-type: none"> <li>□ <i>Career choices:</i> career choice from learning outcome 1 above, potential employers from content learning outcome 2 above, implications of career choice from learning outcome 3 above</li> <li>□ <i>Behaviour:</i> eg responsibility, recognition of strengths, knowledge and understanding of self and other team members, cooperation</li> <li>□ <i>Attitudes:</i> eg enthusiasm; approachability; communication skills eg listening, questioning, speaking clearly; following instructions</li> </ul>
	Be able to work responsibly with others	5.1	Demonstrate good team working skills by working responsibly and cooperatively	
6	Be able to seek, and respond to, guidance when working as part of a team	6.1	Follow instructions when working with others	
		6.2	Communicate appropriately with others	

## Information for tutors

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### Delivery

The purpose of this unit is to encourage learners to think realistically about what it would be like to work in engineering and, more particularly, to help learners match their skills, qualities and aspirations to a job they feel they might want to do. The unit describes a wide range of jobs at all levels but delivery should focus on those jobs learners could access upon completion of a programme based on Level 1 units. Progression issues should be examined by consideration of the ambitions of individual learners and by matching these ambitions to further training and development opportunities.

The unit is designed to provide an overview of the work available in the engineering sector, starting with the range of available jobs, their skill requirements and the different types of organisation that employ people to perform these jobs and offer good training and employment opportunities. In this unit the learners only need to consider job roles and responsibilities in the broadest sense. This could include the difference between craft and technician roles, engineering craft or technical apprenticeships, together with examples of the above.

Learners should be made aware that whilst there are large organisations which dominate the industry, much of the UK engineering sector is made up of smaller organisations which prevail. The reasons why people must work together as a team to plan, design and make products, artifacts and components should be stressed throughout. The unit gives learners the opportunity to think about factors that affect job choice from a variety of perspectives including:

- their personal skills and qualities
- the skills and qualities they might wish to acquire
- the different types of organisation in the engineering sector
- the needs and wants of different organisations in terms of work undertaken, physical location, size and structure
- how a job could affect their lifestyle
- how their lifestyle might have to change
- the relationship between lifestyles and job choices.

## Outline learning plan

The outline learning plan has been included in this unit as guidance.

### Topic and suggested assignments/activities

Know about the different types of career opportunities available in engineering

Whole-class, tutor-led discussions supported by small-group research into the different types of career opportunities available, followed by group presentations of their findings. Source material to include books, CD ROMs, newspapers, trade magazines and the internet. Presentations by experienced engineering personnel will be useful.

Know about the different types of organisation offering career opportunities in engineering

Whole-class, tutor-led discussions supported by small-group research into the different types of organisation working in engineering, followed by group presentations of their findings. Source material to include newspapers, trade magazines and the internet. Presentations by representatives from these organisations will be useful.

Understand how career choices can impact upon an individual's lifestyle

Whole-class, tutor-led, discussions with a question and answer session to draw out learners' thoughts on the potential personal impact of several different career choices at both professional/technical and craft/operative level. Presentations by experienced engineering personnel on the personal advantages and disadvantages of their career choices will be useful.

Be able to make informed career choices

Career choices must be based on the information gathered above and should be realistic and coherent. Evidence should take the form of clear choice of career(s), identification of at least one organisation that offers these careers and evidence that learners have investigated the impact of their career choice on their preferred lifestyle.

Be able to work responsibly with others

Discussion of the benefits of behaving in a cooperative and responsible manner towards staff and other learners. This does not require a formal allocation of time and should occur during both delivery and assessment.

Be able to seek and respond to guidance when working as part of a team

Tutors should encourage learners to ask questions about their work. This could be prompted by tutors asking learners to explain as they work what they are doing, why they are doing it, the nature of the careers they are contemplating and the potential impact of these careers on their preferred lifestyle. Learners should be aware that their attitude, and the nature of their response to any advice, will comprise part of the evidence required to achieve the unit. This does not require a formal allocation of time and should occur during delivery and assessment.

## Assessment

The centre will devise and mark the assessment for this unit.

Learners must meet all assessment criteria to pass the unit.

The use of one assessment instrument is suggested as being sufficient to allow full coverage of the learning outcomes, although assessment may be conducted in two discrete parts to avoid assessment overload for learners. The assessment instrument would therefore comprise all assessment criteria. Assessment could be divided into two parts: firstly 1.1 and 2.1 and, secondly, 3.1 and 4.1. 5.1, 6.1 and 6.2 can be assessed over the whole period of assessment and will not require extra time.

For 1.1, learners must describe two different types of career opportunities in engineering in terms of the skills and abilities needed. One career should relate to professional and technical opportunities and the other should relate to craft and operative job opportunities. A highly detailed answer is not required but the two types of job role must be clearly differentiated.

For 2.1, learners must describe two different types of organisation that offer career opportunities in engineering in terms of their size and the nature of the work they undertake. One organisation should be a large organisation engaged in major engineering projects and the other a small or medium enterprise (SME) engaged in smaller engineering projects. A highly detailed answer is not required but the two types of organisation, and the nature of their work, must be clearly differentiated.

For 3.1, learners must explain how an individual's lifestyle may be influenced by their career choices, in terms of the training and development they will need, their general state of health, the conditions under which they will work, the possible effect on their personal relationships and the general demands of the chosen career. The treatment can be broad as learners do not need to make a career or job choice at this point.

For 4.1, learners must make two realistic career choices. This does not need to relate to their own desired career path as it is unlikely that this will be clear to learners at this stage. Learners must demonstrate the ability to make career choices based on information provided by their tutor. This information should relate to the training and development needed for a range of different jobs and the nature of the different organisations they might work for. As for 1.1 above, a highly detailed answer is not required but learner choices should be essentially correct and clearly differentiated from each other.

For 5.1, learners must demonstrate good teamworking skills by working in a responsible and co-operative manner and by sharing resources and ideas with other learners. They must however produce their own individual evidence which could take the form of a witness statement or observation record.

For 6.1 and 6.2, learners must demonstrate responsibility by seeking and listening to guidance and clarification from tutors, as and when appropriate, and by acting on the guidance received. They should communicate appropriately with both tutors and other learners at all times. Evidence again could take the form of a witness statement or observation record.

## Suggested resources

### Books

A wealth of careers information exists, much of it of a local nature. School, college and public libraries will have useful material and trade magazines, local and regional newspapers which will all help learners to assess the job market at any given time.

Basta N – *Opportunities in Engineering Careers, Rev. Ed.* (Opportunities In! Series) (McGraw-Hill Professional; 2nd edition, 2002) ISBN 978-0071390460

Echaore-McDavid & McDavid – *Career Opportunities in Engineering* (Career Opportunities) (Facts On File Inc, 2007) ISBN 978-0816061525

Garner G – *Careers in Engineering* (McGraw-Hill Contemporary, 2008) ISBN 978-0071545556

### Magazines

*Engineering – (The Engineering Magazine)* ISSN 0013-7782

*Engineering & Technology Magazine*

### Websites

[www.direct.gov.uk/en/YoungPeople/index.htm](http://www.direct.gov.uk/en/YoungPeople/index.htm)

[www.scenta.co.uk/engineering.cfm](http://www.scenta.co.uk/engineering.cfm)

[www.semta.org.uk](http://www.semta.org.uk)

[www.summitskills.org.uk](http://www.summitskills.org.uk)

[www.thecareerengineer.com](http://www.thecareerengineer.com)

[www.yourcareerguide.co.uk/engineer.asp](http://www.yourcareerguide.co.uk/engineer.asp)