

Model Assignment Assessment Material

OCR Level 1/2 Cambridge National Award in Principles in Engineering and Engineering Business

Unit R102: The engineered business world

Please note:

This OCR model assignment is to be used to provide evidence for the unit identified above. Alternatively, centres may 'tailor' or modify the assignment within permitted parameters (see Information for Teachers). It is the centre's responsibility to ensure that any modifications made to this assignment allow learners to show that they can meet all of the learning outcomes and provide sufficient opportunity for learners to demonstrate achievement across the full range of marks.

INSTRUCTIONS TO TEACHERS

The OCR administrative codes associated with this unit are:

- unit entry code R102
- certification codes Award J830 / Certificate J840

The accreditation numbers associated with this unit are:

- unit reference number [R/505/3532]
- qualification reference(s) Award [601/1272/4] / Certificate [601/1273/6]

Duration: Approximately 10 - 12 hours

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Model Assignment: Information for Learners

OCR Level 1/2 Cambridge National Award in Principles in Engineering and Engineering Business

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Scenario for the Assignment

Engineering offers exciting career prospects in sectors such as aerospace, construction, transport, medicine, electronics, and many more. Engineers can be found working in offices, laboratories, outdoors and underground and they often lead the way in technological advance and innovation.

The recruitment of young engineers into all sectors is vital to satisfy the demand for new innovation, the development of new and exciting products and to keep current systems functioning effectively.

Resource materials are required to encourage and excite students who are considering a career within engineering.

In order to accurately promote engineering as a career choice to these students you are to investigate:

- engineering innovations and technological advances
- engineering products and services
- employment within engineering
- size, structure and scope of operation of engineering companies.

Read through all of the tasks carefully, so that you know what you will need to do to complete this assignment.

Your Tasks

Task 1: What has engineering done for you?

Learning Outcome 4, Understanding innovation and technical advances in engineering, is assessed in this task.

And introduction to engineering which engages people in the resource materials is required.

The introduction should look at different applications of engineering innovations and technological advances, and then explore in more detail the impact made by one specific innovation or advance.

Task 2: Engineering Sectors

Learning Outcomes 1, Know about engineering sectors, their products and services, and part of Learning Outcome 3, Know about employment in engineering, are assessed in this task.

Engineering sectors undertake a diverse range of 'engineering' activities. Using **two** different engineering sectors you are to produce materials that describe the products and services of each of the identified engineering sectors.

You are also to provide information about the role of the Engineering Council and its member institutions and how the Engineering Council interacts with each of the sector areas you have identified.

Task 3: Operation of Engineering Companies

Learning Outcome 2, Understand how engineering companies operate, is assessed in this task.

Working within engineering offers many opportunities to work in different sizes and types of companies and organisations.

You will need to produce relevant materials that will explain:

- the size, structure and scope of operation of **two** engineering businesses
- the relationships that can exist between your chosen engineering companies and their competitors, suppliers and partners.

Task 4: Employment within engineering

Part of Learning Outcome 3, Know about employment in engineering, is assessed in this task.

Engineering offers many different types of career opportunities at different levels. How do you access these career opportunities? What are the employee/employer rights and responsibilities associated with roles within engineering?

You will need to produce materials which provide information on:

- sources of engineering careers information
- the career opportunities within engineering
- entry routes for employment in engineering
- employee/employer rights and responsibilities.

You should demonstrate your ability to draw upon **relevant** skills/knowledge/understanding from other units you have studied. *(Where tasks relate directly to LOs, this statement (or similar) should be related to the relevant task)*

Information for Teachers

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Guidance on using this assignment

1 General guidance

- 1.1 OCR assignments are available to download free of charge from our website: www.ocr.org.uk
- 1.2 OCR assignments are intended to be used for summative assessment of learners. The OCR specification gives more information on the arrangements for assessing internally assessed units.
- 1.3 This assignment has been designed to meet the full assessment requirements of the unit. Learners will need to take part in a planned learning programme that covers the underpinning knowledge, understanding and skills of the unit.

2 Before carrying out the assignment

- 2.1 Learners should be provided with a copy of the *Information for Learners* section of this assignment.
- 2.2 Learners will not need to carry out any preparations prior to undertaking the assessment tasks, such as collating resources to use in the assessment
- 2.3 We have estimated that it will take approximately 10 - 12 hours to complete all tasks. Learners would need approximately 2 - 3 hours to complete task 1 and approximately 3 hours to complete task 2, approximately 3 hours to complete task 3 and approximately 2 - 3 hours to complete task 4. These timings are for guidance only but should be used by the teacher to give learners an indication of how long to spend on each task. Centres can decide how the time can be allocated between each part or individual task. Centres are also permitted to spread the tasks across several sessions and therefore it is permissible for evidence to be produced over several sessions.

3 When completing the assignment and producing evidence

- 3.1 Each learner must produce individual and authentic evidence for each task within the assignment.
- 3.2 Centre staff may give support and guidance to learners. This support and guidance should focus on checking that learners understand what is expected of them and giving general feedback that enables the learner to take the initiative in making improvements, rather than detailing what amendments should be made. It is not acceptable for teachers/deliverers to provide answers, to work through answers in detail or to detail specifically what amendments should be made.
- 3.3 Learners may use information from any relevant source to help them with producing evidence for the tasks.
- 3.4 Learners must be guided on the use of information from other sources to ensure that confidentiality is maintained at all times.
- 3.5 We have specified what evidence the learner is expected to produce. Usually, the type of evidence provided may be modified, with the exception of certain types of evidence listed below under '*Permitted changes*'. It is important to note that it is possible to generate the evidence in a variety of formats. Centres must advise learners as to the most appropriate format of evidence. The nature of this assessment means that learners are free to use the format that they feel is most appropriate for the purpose and target audience for each individual task.

4 Presentation of work for marking and moderation

- 4.1 Centres wishing to produce digital evidence in the form of an e-portfolio should refer to the appendix in the specification on guidance for the production of electronic assessment.
- 4.2 Centres may wish to discourage learners from excessive use of plastic wallets for presentation of their evidence as this may hinder the assessment process. Instead centres may wish to encourage learners to present their work so that it is easily accessible, e.g. spiral bound, stapled booklet, treasury tag.

5 Scope of permitted model assignment modification

The model assignment is self-contained in its present form. The set of tasks form a coherent whole addressing all the learning outcomes and allowing access to the full range of marks.

You must not change the following:

- the learning outcomes
- the marking criteria
- the requirements for supervision and authentication as described in the specification (Section 4 *The centre assessed units*).

Permitted changes:

The model assignment is self-contained in its present form. The set of tasks form a coherent whole addressing all the Assessment Criteria.

No changes can be made to the following:

- the assessment criteria
- the level of control for task taking

The model assignment can be changed in terms of:

- the learner's brief, which can be contextualised or amended to suit local needs. However, the scenario must still be set within a sector relevant context and be engaging and motivating for the learners.
- who the end user/client is and what their requirements are
- each specific task may be appropriately contextualised
- links to other unit assignments.

OCR has ensured that in the language used and the tasks and scenario provided we have avoided discrimination, bias and stereotyping and support equality and diversity. In the development of qualifications and assessments we use the guidance given in the Ofqual publication *Fair access by design*, notably this includes:

- using language and layout in assessment materials that does not present barriers to learners
- using stimulus and source materials in assessment materials (where appropriate) that do not present barriers to learners.

If centres wish to modify the model assignment we strongly advise that staff responsible for modifying the model assignment and the quality assurance of it refer to the publication *Fair access by design*.

If modifications are made to the model assignment, whether to just the scenario or to both the scenario and individual tasks, it is up to the centre to ensure that all learning outcomes can still be met and that learners can access the full range of marks.

6 Specific guidance on the task

Task 1

Learners can choose any **one** innovation and technological advance from any sector that they are interested in but they must be guided to choose something that has had different applications.

Task 2

Learners can use the same sector they have used in task 1 for one of their **two** chosen sectors. Their responses must include examples of products and services for their chosen sectors. Learner's investigation of the Engineering Council and the role it plays must relate to both of the chosen sectors.

Task 3

The learner should investigate the specified characteristics of **two** engineering companies from any sectors that are of interest to them, including sectors they have already covered in other tasks for this model assignment. The specified characteristics are:

- size (e.g. micro, SME, large)
- structure (e.g. flat, hierarchy, pyramid)
- scope of operation (e.g. local, national, global).

Learners should also examine relationships within the engineering market place between their chosen companies and:

- competitors within the same engineering market
- suppliers, and supply chain companies working together
- partners working in the same engineering market

It may benefit learners to use local engineering companies to exemplify their work and teachers can give general guidance to all learners to do so.

Task 4

Learners will need to investigate career entry points and opportunities for career progression with engineering sectors. They should investigate both employee and the employer rights and responsibilities.

Total marks for assignment: 60