

Live Assessment

Assessment Material

OCR Level 1/2 Cambridge National Award in Principles in
Engineering and Engineering Business
OCR Level 1/2 Cambridge National Certificate 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 F/505/3532
- qualification reference(s) Award [601/1272/4] / Certificate [601/17/1]
- **Duration: Approximately 10-12 hours**

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Live Assessment: Information for Learners

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Scenario for the Assignment

Engineering offers a diverse range of different disciplines and sectors. Advances in materials and the technologies used to manufacture products and provide services makes the world of engineering an exciting and competitive marketplace in which to work. The Engineering Council and its member institutions represent engineering across all sectors.

Engineering sectors include:

- aerospace
- automotive
- electronics
- marine
- rail
- metals
- chemical
- process
- civil
- medical
- utilities

In order to develop interest in engineering and engineering careers, a resource is required to inform people about the range of sectors and career opportunities in engineering.

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: Engineering sectors, their products and services.

Learning Outcome 1, Know about engineering sectors, their products and services, is assessed in this task.

Select three engineering sectors that are of interest to you. Research these sectors, their products and services.

You should produce evidence of:

- the researched sectors and details of the services/products provided .

Task 2: How engineering companies operate

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

Engineering companies vary in size, structure, function and scope of operation. For one of the engineering sectors you have identified in task 1, you will research companies and their relationships within the engineering market place.

You will need to explain the:

- characteristics of different engineering companies
- relationships which the companies you have researched have with competitors, suppliers and partners within the engineering market place.

Task 3: Employment within engineering

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

The Engineering Council would like to produce a guide to careers within engineering. The guide will be in two parts. The first part will give an overview of the Engineering Council and its member institutions. The second part will describe the career opportunities available within engineering.

You are to produce the guide on behalf of the Engineering Council which should contain:

- sources of engineering careers information
- the range of career opportunities within engineering business functions
- entry routes into employment within engineering.
- information regarding employee/employer rights and responsibilities.

Task 4: Engineering innovation and technological advance

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

The Engineering Council would like a case study in their guide to careers to illustrate the kind of 'cutting-edge' work being done within engineering.

Your task is to produce a case study of one recent application of an engineering innovation and technical advance and the impact of this innovation and technical advance in engineering.

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, 3-4 hours to complete Task 2, 2-3 hours to complete Task 3 and 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 Usually, the type of evidence required 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 (see Section 6).

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.
- 4.3 All work must be marked against the marking criteria for the unit. Marks are allocated to learning outcomes rather than tasks. Please see Appendix B Marking criteria for centre assessment and Section 4 The centre assessed units in the specification for this qualification for more information on marking, moderation and submission of work.

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*)
- the maximum duration for completion of the assignment.

Permitted changes:

The model assignment can be modified in terms of the areas described below but centres must be sure that learners still have the opportunity to cover all of the learning outcomes and to access the full range of marks:

- the scenario, which can be contextualised or amended to suit local needs
- each specific task may be appropriately contextualised to match with any permitted changes you have made to the scenario.

Should the centre change the context of the assignment they must make sure that the circuit to be constructed and tested is of equal complexity to that given in this model assignment. The circuit design must be fully tested to ensure its correct operation prior to learners undertaking the task.

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 should select three sectors of interest to them to research. The requirement in Task 2 to look at different types of engineering companies within one of the sectors chosen in Task 1 should be kept in mind when selecting sectors to research.

Task 2

Learners should examine a range of companies within their research which will enable them to consider the different characteristics of engineering companies and relationships between companies..

Task 3

Learners should independently research the Engineering Council and its member institutions; identify sources of engineering careers information and the range of career opportunities. They will examine entry routes into employment along with information regarding employee/employer rights and responsibilities.

Task 4

Learners should select one engineering sector that is of interest to them. They should research an innovation and technical advance in engineering and its impact..

Total marks for assignment: 60