

Model Assignment

Issued September 2008

OCR Level 2 Principal Learning in Engineering

Unit F551: Producing engineering solutions

Please note:

This OCR model assignment may be used to provide evidence for the unit above. Alternatively, centres may 'tailor' the assignment within permitted parameters (see 'Notes for Tutors'). It is the centre's responsibility to ensure that any adaptations made to this assignment allow learners to meet all the assessment objectives and provide sufficient opportunity for learners to demonstrate achievement across the full range of marks.

The scheme codes for these qualifications are:

OCR Level 2 Principal Learning in Engineering 500/2399/8

The QCA Accreditation Number for this unit is:

Unit F551: Producing engineering solutions A/501/1887

This OCR model assignment remains live for the life of these qualifications.

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Model Assignment: Learner Information

OCR Level 2 Principal Learning in Engineering
Unit F551: Producing engineering solutions

Model Assignment

Description of model Assignment

OCR Lighting Solutions Ltd is a specialist company involved in the design and manufacture of lighting solutions for the workplace. As part of its existing product range the company design and manufacture aluminium desk lamps. The lamps can be adjusted by the user to allow them to target the direction of the light.

The lamps have been very popular but analysis of sales figures shows that the number of lamps being sold has declined in the last 6 months.

Within Unit F549 Level 2 of the Diploma in Engineering you were asked to work as part of the engineering research and development team to carryout a review of the existing lamp design as well as competitors products. You then identified possible improvements to the existing product and designed a replacement.

The directors of OCR Lighting Solutions Ltd have now approved your design. They have instructed you to manufacture your lamp design. You will need to produce a single lamp which will be demonstrated to the directors for final approval prior to full production taking place.

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

Tasks

Task 1: Planning for safe production

The directors of OCR Lighting Ltd have instructed you to manufacture the lamp which you designed as part of your work in Unit F549 Level 2 of the Diploma in Engineering. In order to manufacture the product safely and efficiently you need to produce a detailed production plan.

Assessment Criteria 1.1, 1.2

Your task is to:

- produce a detailed production plan. The plan should contain:
 - your starting documentation (working drawings)
 - detail relating to the selection of suitable materials, standard components
 - manufacturing processes to be used
 - detail relating to quality control
 - health and safety issues related to the production
 - a risk assessment for the manufacture of the lamp.

Task 2: Making, reviewing, modifying and quality control

Assessment Criteria 2.1, 2.2, 2.3, 3.1

Your task is to:

- use your production plan to manufacture the lamp.

You will need to:

- produce a high quality and accurate outcome that demonstrates your effective making skills
- record and review your progress during making, adapt ideas as circumstances change, and update your production plan in order to produce a high quality and accurate outcome
- record and review the use and outcomes of quality control procedures
- check the performance of your risk assessment and make any necessary modifications
- provide real time and photographic evidence of your safe and efficient use of:
 - hand tools
 - machinery
 - other equipment

- you will need to annotate the evidence to explain:
 - your use of tools, machines and equipment
 - adherence to Health and Safety requirements
 - the effectiveness of your Risk Assessment
 - the outcomes of quality checks you used during production, installation and during maintenance
 - your observations of your own progress during production

Model Assignment: Tutor Information

OCR Level 2 Principal Learning in Engineering

Unit F551: Producing engineering solutions

Guidance for Centres

1 General

1.1 OCR model assignments are issued free to participating centres and are also available to download from our website: www.ocr.org.uk.

1.2 Centres may choose to:

- use OCR model assignments for formal summative assessment of learners
- tailor OCR model assignments for formal summative assessment of learners

It is intended that this Model Assignment can be used by centres without modification. However, in order provide appropriate contextualisation, improve access or increase local relevance, centres may 'tailor' the Model Assignments within set parameters. Details of the scope of adaptation are provided in the 'Notes for Tutors' section of this document.

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 and skills of the unit.

2 Before carrying out the assignment

2.1 Learners should be provided with a copy of the *Learner Information* section of this assignment or the centre adapted Model Assignment.

2.2 Learners may carry out preparations prior to undertaking the tasks; there is no time limit for this.

3 When completing the assignment

3.1 All assessment evidence must be produced under **controlled conditions** so that the overall level of permit control secures validity and reliability, provides good manageability for all involved and allows presenters to authenticate the work confidently. Further guidance on **controlled conditions** is provided within the OCR Principal Learning Handbook.

3.2 In this unit it is recommended that learners spend 30glh on the acquisition of knowledge, skills and understanding. The remaining 30glh will take the form of controlled assessment where learners produce the appropriate evidence

3.3 Each learner must produce individual and authentic evidence for each task within the assignment.

- 3.4 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. It is not acceptable for tutors to provide model answers or to work through answers in detail.
- 3.5 Learners may use information from any relevant source to help them with producing evidence for the tasks.

4 After completing the assignment

- 4.1 Learners' evidence is assessed by the centre's assessor against the qualification specification contained in the Principal Learning Handbook. When marking learners work, centres **must** use the descriptors provided within the unit. For further information about assessment please refer to the section on Assessment and Moderation in the Principal Learning Handbook.
- 4.2 Assessors' decisions should be quality assured across the centre through internal moderation. For further information about internal moderation please refer to the section on Assessment and Moderation in the Principal Learning Handbook.

5 Presentation of work

- 5.1 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, CD-ROM.

6 Acceptable evidence

- 6.1 For guidance on generation and collection of evidence please refer to the section on Assessment and Moderation in the Principal Learning Handbook.

7 Plagiarism and unauthorised collaboration

- 7.1 Centres should have adequate procedures in place to ensure that plagiarism and unauthorised collaboration are identified and responded to.
- 7.2 When supervising tasks, tutors are expected to:
- offer learners advice about how best to approach such tasks
 - inform learners of the ramifications of unfair practice
 - exercise continuing supervision of work in order to monitor progress and to prevent plagiarism
 - ensure all copied materials is suitably acknowledged
 - ensure copied material is not given credit in the assessment process
- 7.3 As with all controlled assessments, the presenter must be satisfied that the work submitted for assessment is the learner's own work.

Notes for Tutors

Introduction to the Tasks

This is a practical unit and the task has been designed to enable learners to demonstrate their knowledge and understanding of both planning and the production of a quality engineered solution using their own plan in a safe, effective and efficient manner.

During production they will need review their own progress, adapt to circumstances as they change and undertake appropriate quality checks and also review and adjust their risk assessment as appropriate.

It is likely that the assignment will link directly with the sector in which the learner has most experience and these activities could be carried out in the context of production, maintenance, installation and commissioning.

Learners may use the brief, specification and working drawings which they produced in Level 2 Unit F549 of the Diploma in Engineering or alternatively centres can provide a set of engineering drawings and instructions.

Guidance should be given by the presenter to ensure learners undertake a task of appropriate demand to ensure learners have access to all the assessment criteria.

Consideration should be given to the following:

- capability of the engineered solution to show its fitness for purpose
- centre engineering resources
- access to specialist equipment
- material availability
- time restrictions
- health and safety issues
- capability of the engineered solution to be
- other centre resources such as photography and ICT

These guidance notes should be used in conjunction with the unit specification and Principal Learning Handbook.

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 assessment criteria.

It is permissible to contextualise or carry out modification of this model assignment in order provide appropriate contextualisation, improve access or increase local relevance. However, centres must take great care when 'tailoring' tasks to ensure that modifications do not result in the over direction of learners, devalue the applied nature of the work or deny the learner the opportunity to generate evidence for all the assessment criteria at all levels of outcome.

No changes to the assessment criteria are allowed.

The model assignments can be changed in terms of the following:

- the materials and processes that are chosen for study
- the range of information/resources students have access to
- each specific task linked to a particular assessment criteria may be appropriately contextualised

When completing this model assignment it may be possible to generate evidence for completing a task in a variety of formats. This list is not exhaustive and will depend on the approach taken to complete the task or model assignment. In some cases the task or model assignment will require a specific format for the outcome and this will be clearly marked in the table.

Depending on the approach taken to the model assignments it may also be possible to demonstrate additional PLTS coverage and some additional opportunities have been listed below.

Task activity	Nature of evidence generated	Potential Assessment Criteria coverage
<p>Task 1</p> <p>Planning for safe production</p>	<p>a detailed production plan containing;</p> <ul style="list-style-type: none"> • starting documentation (working drawings) • detail relating to the selection of suitable materials, standard components • information regarding manufacturing processes to be used • detail relating to quality control • health and safety issues related to the production • a risk assessment for the manufacture of the lamp. 	<p>Assessment Criteria</p> <ul style="list-style-type: none"> • 1.1, 1.2 <p>PLTS</p> <ul style="list-style-type: none"> • SM3 • SM4
<p>Task 2</p> <p>Making, reviewing, modifying and quality control</p>	<p>the production of a high quality product which is fit for purpose</p> <p>detailed review of progress during making, adaptation of ideas and production plan as circumstances change</p> <p>check materials and components at commencement of operations, at critical stages during the activities and on completion of the activities</p>	<p>Assessment Criteria</p> <ul style="list-style-type: none"> • 2.1, 2.2, 2.3 • 3.1 <p>PLTS</p> <ul style="list-style-type: none"> • RL3 • CT5 • CT6