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Internal Assessment Sample Tasks

NCFE Level 2 Certificate in Engineering Studies (601/4532/8)

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Contents

Please note: Unit 02 Introduction to engineering drawing is externally assessed.

Introduction

NCFE has created a set of sample tasks for each unit which you can contextualise to suit the needs of your candidates to help them build up their portfolio of evidence. The tasks have been designed to cover all the learning outcomes and assessment criteria for each unit and provide opportunities for stretch and challenge.

To allow you the freedom to apply local or topical themes appropriate to your candidates, we've left the subject of the tasks open for you to design for each unit. You should plan the subject and apply the brief to the tasks in a way that suits your candidates and relates to local need.

If you choose to create your own internal assessment tasks, they must:

- be accessible and lead to objective assessment judgements
- permit and encourage authentic activities where the candidate's own work can be clearly judged
- permit effective discrimination between learners operating at different levels.

NCFE has provided guidance to help Teachers create valid and reliable internal assessment tasks. For further information please see Internal Assessment Tasks: Guidance for Centres on our website www.ncfe.org.uk.

Grading descriptors have been written for each assessment criterion within a unit. Assessors must be confident that, as a minimum, all assessment criteria have been evidenced and met by the candidate. Assessors must make a judgement on the evidence produced by the candidate to determine the grading decision for the unit as a whole.

The grading descriptors for each unit can be found in Section 4 (page 31) of the qualification specification. Assessors should also refer to the grading criteria glossary of terms which can be found in Section 8 (page 64) of the qualification specification and the grading exemplification document found on the website. More information about internal assessment can be found in our qualification specification in Section 2 (page 17).

Supervision of candidates

Teachers are expected to supervise and guide candidates when carrying out work that is internally assessed.

Teachers should supervise the work carried out by candidates to:

- monitor their progress
- prevent plagiarism
- ensure that any practical work is undertaken safely and in accordance with health and safety requirements
- ensure that the work completed is in accordance with the qualification specification and is suitable for internal assessment.

Any work submitted for assessment must be authenticated and attributable to the candidate. The Teacher must be satisfied that the work produced is the candidate's own and the candidate must declare that the work is their own.

Supporting candidates

Teachers/Assessors are also responsible for supporting candidates through the assessment process to ensure that they are able to create and redraft/revise work independently.

Teachers/Assessors may:

- help the candidate to understand the concept of work-related work, applied learning and vocational qualifications
- help the candidate to understand the performance expectations for each of the grades (both within and between units) and how their work will be assessed
- help the candidate to understand how to prepare and present their evidence, including what constitutes plagiarism and other forms of cheating
- motivate the candidate to work consistently through the programme, including helping them work to deadlines
- encourage the candidate to take the initiative in making improvements to their work but stop short of telling them the detail of the improvements to make
- provide reference material however, model or worked answers should not be copied by the candidate.

Assessment scenario

You are embarking on an engineering qualification. Your training will be school based and it's the intention of the school to create links with local engineering companies to generate work experience placements for you and your class later in the year.

The school would also like to raise its own profile in the local community as an outstanding provider of engineering training. Therefore, local press and media will be invited during the course of your studies to attend engineering venues hosted at the school.

It is intended that your work and practical assignments will be used as examples of outstanding work at these venues.

The school will regularly invite engineering professionals during the course to monitor your progress and showcase your work. This could open further job opportunities for you in the future.

Unit 01 Introduction to engineering (J/506/3765)

Internal assessment task

You have been asked to produce a professional portfolio that will be on display during an open day that the school intends to host. Your school will invite influential guests from a range of engineering companies, guests from the local community and local media.

The aim of the open day is to develop links with local industries, developing future work experience placements and raising awareness of engineering in the local community. You are expected to produce a portfolio that is professional and interesting, and which can be explained by you at the open day. Your portfolio can be split into three distinct areas:

- an explanation and description of engineering
- a case study that shows the advantages of engineering for society and how further improvements can be made
- a range of examples of how Science, Technology, Engineering and Mathematics (STEM) are linked.

Task 1 (AC 1.1–1.4)

The first section of your portfolio should provide evidence that you understand what engineering is.

You will have to use various sources of research in order to make this section appealing to engineering professionals and informative to members of the local community.

1.1 Explain the term ‘engineering’
1.2 Describe different engineering sectors
1.3 Describe the skills and qualities needed to become an engineer
1.4 Assess the importance of health and safety in a chosen engineering environment

You should intend to make this section as informative and interesting as possible. Your portfolio should look professional and eye-catching.

Unit 01 Introduction to engineering (J/506/3765) (cont'd)

Internal assessment task (cont'd)

Task 2 (AC 2.1–2.3)

This section aims to appeal directly to your guests from the industry.

2.1 Describe a range of engineering organisations and the product(s)/service(s) they provide
2.2 Compare manufacturing processes for the chosen engineering organisations
2.3 Describe the advantages and disadvantages that the product(s)/service(s) has on society

As well as describing several examples of engineering organisations, you could focus on one in particular that you expect will attend the open day.

Task 3 (AC 3.1–3.3)

This task will involve in-depth research so you can describe how science, technology and mathematics are all linked in engineering education and industry. You should also aim to use examples relating to the environment and how products from engineering organisations help to improve it.

3.1 Describe the use of science in engineering
3.2 Describe the use of technology in engineering
3.3 Describe the use of maths in engineering

Types of evidence:

- research file
- discussions
- notes
- presentation portfolio
- posters
- leaflets
- screenshots
- questions and answers
- case study
- report
- audio/visual evidence.

Unit 03 Tools and equipment for engineering (R/506/3767)

Internal assessment task

You are starting the practical phase of your engineering training. As with any practice-based industry, it is vital that employees are competent with tools, equipment and processes used in their daily work. In order to be deemed competent, you will provide evidence of appropriate training, knowledge, understanding and skills relating to the three areas below (assessment criterion 4.1 must be evidenced throughout all tasks):

- hand tools
- power/portable tools
- fixed equipment.

Task 1 (AC 1.1–1.4, 4.1)

Create a record of evidence using descriptive reports, photographic proof and manufacturing plans that shows you have completed the assessment criteria.

1.1 Describe the purpose of common hand tools found in an engineering environment
1.2 Select the most appropriate common hand tools for an identified purpose
1.3 Perform operations with common hand tools, for an identified purpose
1.4 Demonstrate sufficient maintenance techniques for the tools used
4.1 Demonstrate a safe working environment throughout

Task 2 (AC 2.1–2.4, 4.1)

Create a record of evidence using descriptive reports, photographic proof and manufacturing plans that shows you have completed the assessment criteria.

2.1 Describe common power/portable tools found in an engineering environment
2.2 Select the most appropriate common power/portable tools for an identified purpose
2.3 Perform operations with common power/portable tools, for an identified purpose
2.4 Demonstrate sufficient maintenance techniques for the tools used
4.1 Demonstrate a safe working environment throughout

Unit 03 Tools and equipment for engineering (R/506/3767) (cont'd)

Internal assessment task (cont'd)

Task 3 (AC 3.1–3.4, 4.1)

3.1 Describe common fixed equipment found in an engineering environment
3.2 Select the most appropriate common fixed equipment for an identified purpose
3.3 Perform operations with common fixed equipment, for an identified purpose
3.4 Demonstrate sufficient maintenance techniques for the equipment used
4.1 Demonstrate a safe working environment throughout

Types of evidence:

- tool requisition forms
- job lists/plans
- annotated photographs
- observation reports
- portfolio
- research file
- record of demonstrations
- audio-visual evidence
- checklists.

Unit 04 Engineering materials and their properties (Y/506/3768)

Internal assessment task

You have been tasked with the investigation and production of an engineered product. You will demonstrate appropriate levels of knowledge, skills and engineering processes gained throughout the course. The aim of this task is to provide evidence of material research, engineering techniques and processes to manipulate materials into an appropriate engineered product. All assessment criteria must be evidenced from planning to completion.

You can use knowledge and skills gained from all previous units within this task.

Task 1 (AC 1.1–1.2, 2.1–2.5, 3.1)

Investigate and produce an engineered product for an identified purpose. You must provide evidence throughout the task that you have addressed the assessment criteria. The following assessment criteria must be evidenced.

1.1 Describe engineering materials and their properties
1.2 Select the most appropriate engineering materials for an identified purpose
2.1 Perform a range of techniques used to prepare the selected engineering materials for use
2.2 Perform a range of marking out techniques for the selected engineering materials
2.3 Perform a range of processes to modify the selected engineering materials to shape and size
2.4 Perform a range of correct joining methods for the selected engineering materials
2.5 Perform a range of finishing techniques for the selected engineering materials
3.1 Demonstrate a safe working environment throughout

Unit 04 Engineering materials and their properties (Y/506/3768) (cont'd)

Internal assessment task (cont'd)

Task 1 (AC 1.1–1.2, 2.1–2.5, 3.1) (cont'd)

Types of evidence:

- materials requisition form(s)
- cutting list(s)
- job plan/list(s)
- costing sheet(s)
- annotated photographs
- observation reports
- portfolio
- research file
- record of demonstrations
- audio-visual evidence
- checklists
- completed product.