



# Internal Synoptic Project

**NCFE Level 1/2 Technical Award in Engineering  
(603/2963/4)**

**Sample**

**Version 2.0 January 2019**

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## Introduction

The internal synoptic project is a formal assessment that requires the learner to independently apply an appropriate selection of knowledge, understanding, skills and techniques, developed through the full course of study, in response to a real-world situation, to enable them to demonstrate an integrated connection and coherence between the different elements of the qualification.

The internal synoptic project will contribute 60% towards the overall qualification grade and therefore it is important that the learner produces work to the highest standard that they can. The learner therefore should not be entered for the internal synoptic project until they have been taught the full course of study, to ensure that they are in the best position to complete the internal synoptic project successfully.

## What is synoptic assessment?

Synoptic assessment is an important part of a high-quality vocational qualification because it shows that learners have achieved a holistic understanding of the sector and that they can make effective connections between different aspects of the subject content and across the breadth of the assessment objectives in an integrated way. The Department for Education (DfE) has consulted with Awarding Organisations and agreed the following definition for synoptic assessment:

***“A form of assessment which requires a candidate to demonstrate that s/he can identify and use effectively in an integrated way an appropriate selection of skills, techniques, concepts, theories, and knowledge from across the whole vocational area, which are relevant to a key task.”***

Synoptic assessment enables learners to show that they can transfer knowledge and skills learnt in one context to resolve problems raised in another. To support the development of a synoptic approach, the qualification encourages learners to make links between elements of the course and to demonstrate how they have integrated and applied their increasing knowledge and skills.

As learners progress through the course, they will use and build upon knowledge and skills learnt across units. The internal synoptic project will test learners' ability to respond to a real-world situation.

## Information for learners

The internal synoptic project is a formal assessment that will contribute 60% towards your overall qualification grade and therefore it is important that you produce work to the highest standard that you can.

You will be assessed on your ability to independently select, apply and bring together the appropriate knowledge, understanding, skills and techniques you have learnt throughout your course of study, in response to a brief set in a real-world-situation.

The internal synoptic project will be assessed holistically against five integrated assessment objectives. These assessment objectives and their weightings are shown below.

You should not start your internal synoptic project until you have been taught the full course of study. This will ensure that you are in the best position to complete the internal synoptic project successfully.

<b>Assessment Objective</b>
<b>AO1 – Recall knowledge and show understanding</b> The emphasis here is for learners to recall and communicate the fundamental elements of knowledge and understanding.  <b>10%</b>
<b>AO2 – Apply knowledge and understanding</b> The emphasis here is for learners to apply their knowledge and understanding to real-world contexts and novel situations, including finding creative solutions.  <b>15%</b>
<b>AO3 – Analyse and evaluate knowledge and understanding</b> The emphasis here is for learners to develop analytical thinking skills to make reasoned judgements and reach conclusions.  <b>20%</b>
<b>AO4 – Demonstrate and apply technical skills and processes</b> The emphasis here is for learners to demonstrate the essential technical skills relevant to the vocational sector, by applying the appropriate processes, tools and techniques.  <b>45%</b>
<b>AO5 – Manage and evaluate the project</b> The emphasis here is for learners to develop the necessary skills of forethought, time management, self-reliance and self-reflection.  <b>10%</b>



# NCFE Level 1/2 Technical Award in Engineering (603/2963/4)

## Internal Synoptic Project

### Sample 2018

#### Centre instructions

- To be given to learners on or after **XX December 20XX**.
- This internal synoptic project is intended for those learners who will be claiming their certificates in **summer 20XX only**.

#### Learner instructions

- Read the project brief carefully before you start the work.
- You **must** clearly identify all of the work you produce during the supervised time.
- You **must** hand in all of your work to the supervisor at the end of each session.

#### Learner information

- This internal synoptic project will assess your knowledge and understanding from across the qualification.
- The completion time for this internal synoptic project is 21 hours.
- All of the work you submit **must** be your own.

Please complete the details below clearly and in BLOCK CAPITALS.

Learner name \_\_\_\_\_

Centre name \_\_\_\_\_

Learner number

Centre number

## **Project Brief**

You work for a mechanical engineering company who manufacture hydraulic equipment for the construction industry.

You have been asked to design a new model of hydraulic excavator and are required to produce a **working scaled model** of the machine to present to the board of directors.

**You have been provided with a basic drawing of a hydraulic excavator with all relevant parts labelled. Use this sketch where required throughout the project.**

You are required to produce a **portfolio of evidence** to accompany your model of a hydraulic excavator.

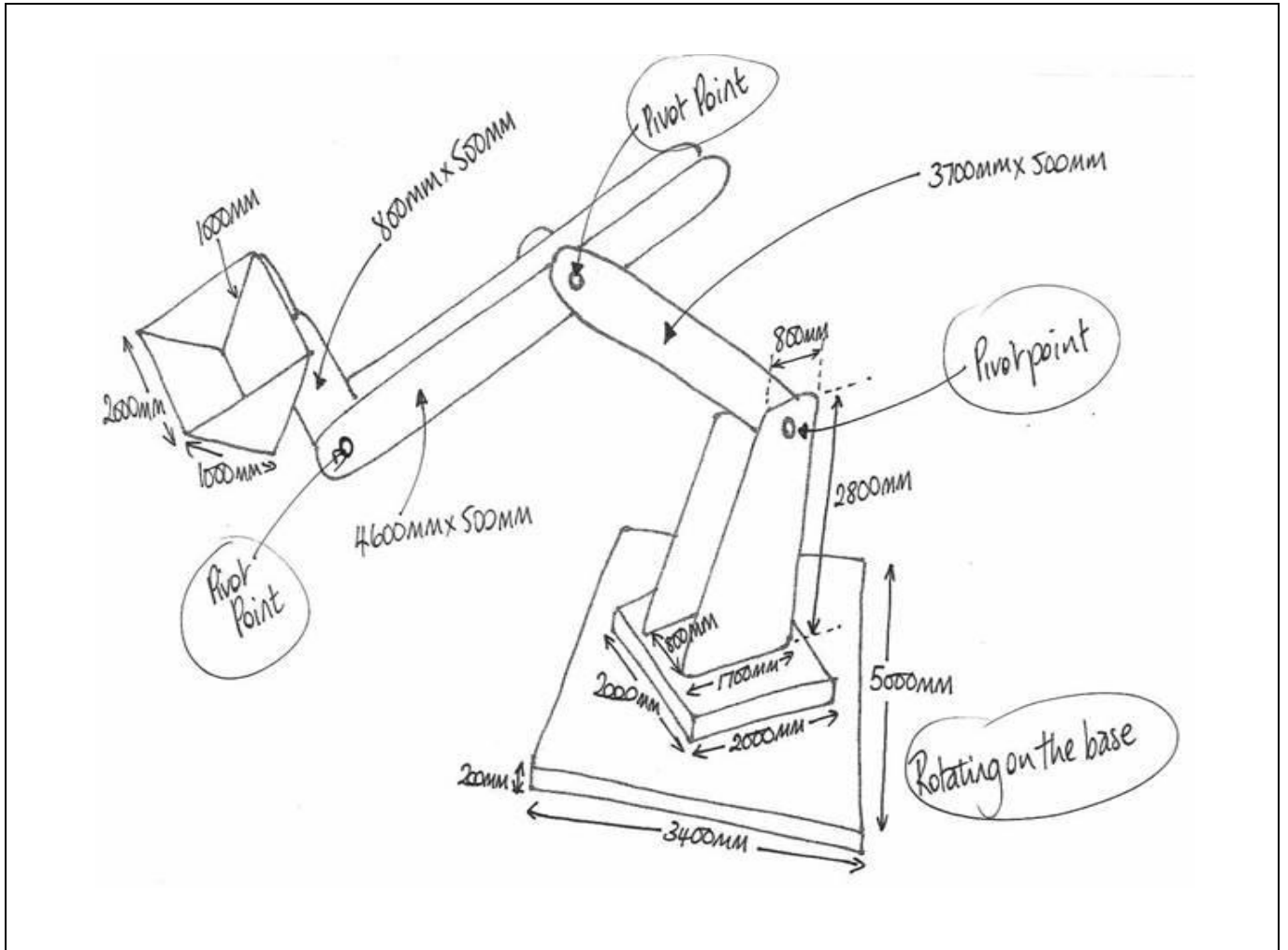
The portfolio should include:

- CAD **and** hand-drafted engineering drawings of your hydraulic excavator using the given information in the sketch
- evidence of materials, tools and machinery testing
- a production plan
- an evaluation of the project, making reference to your learner log where appropriate.

Using your **engineering drawings** and **production plan**, manufacture your hydraulic excavator to an appropriate scale of choice, selecting and using the most appropriate materials, tools and techniques.

During the manufacturing process, you should:

- demonstrate that you are able to carry out manufacturing techniques
- evidence how you demonstrated safe and correct use of a variety of tools and/or machinery throughout the manufacturing process.



## Learner log and project evaluation

As you work through the project, you are **required** to keep a learner log to record your approach. You should include:

- how you prepared
- what resources you used
- how you managed your time.

You **must** use your completed learner log to carry out an evaluation of the project.

## Evidence

You are required to submit the following for assessment:

- your portfolio of evidence
- your model of the hydraulic excavator
- your learner log, including your evaluation.

## **Types of evidence**

Below is a list of suggested types of evidence that you could include:

- written/word-processed documents
- presentations
- diagrams
- annotated evidence to include photographs, image and diagrams
- technical drawings
- video/audio evidence
- witness statements (as supporting evidence)
- learner observation records (as supporting evidence).

**During the project, you will need to refer to the ‘Project Brief’ to obtain information.**

**This is the end of the internal synoptic project.**



## Grading of Learner Evidence

The internal synoptic project is assessed holistically against five integrated assessment objectives. The assessment grids for each assessment objective (AO) have been designed to award a learner's response to the internal synoptic project holistically, looking at the overall quality, and should follow a best-fit approach. The assessment grid for each AO is broken down into bands, with each band having an associated descriptor indicating a learner's performance at that band.

Assessors must make a judgement using all of the evidence produced by the learner to determine the assessment decisions for the internal synoptic project.

The weighting for each AO is detailed on page 4 of this document.

**The internal synoptic project requires effective use of integrated knowledge, understanding and skills from across the full breadth of the qualification content.**

AO1 Recall knowledge and show understanding	
Band	Descriptors
3	Learners recall and communicate a <b>wide range of comprehensive</b> engineering knowledge and understanding. Subject-specific terminology is used <b>accurately</b> and <b>consistently throughout</b> the project.
2	Learners recall and communicate a <b>range</b> of engineering knowledge and understanding. Subject-specific terminology is used <b>appropriately on occasion</b> .
1	Learners recall and communicate <b>basic</b> engineering knowledge and understanding. Subject-specific terminology is <b>basic</b> and <b>inconsistent</b> .
<b>NYA</b>	No rewardable material.

AO2 Apply knowledge and understanding	
Band	Descriptors
3	Learners <b>accurately</b> apply knowledge and understanding of maths, science and engineering theory, which is <b>relevant</b> to the context and situation.
2	Learners' application of knowledge and understanding of maths, science and engineering theory is <b>mostly accurate</b> and has <b>some relevance</b> to the context and situation.
1	Learners' application of knowledge and understanding of maths, science and engineering theory is of <b>limited accuracy and relevance</b> to the context and situation.
<b>NYA</b>	No rewardable material.

<b>AO3 Analyse and evaluate knowledge and understanding</b>	
<b>Band</b>	<b>Descriptors</b>
<b>3</b>	Learners <b>critically</b> analyse and evaluate engineering information, <b>systematically</b> judging and reaching <b>reasoned</b> and <b>valid</b> conclusions.
<b>2</b>	Learners <b>appropriately</b> analyse and evaluate engineering information, judging and reaching <b>suitable</b> conclusions.
<b>1</b>	Learners <b>respond simply</b> to engineering information and <b>provide comments</b> .
<b>NYA</b>	No rewardable material.

<b>AO4 Demonstrate and apply technical skills and processes</b>	
<b>Band</b>	<b>Descriptors</b>
<b>3</b>	Learners demonstrate and apply <b>relevant</b> engineering technical skills <b>effectively</b> , by applying and using <b>appropriate</b> engineering processes, tools and techniques.  Learners demonstrate and apply engineering technical skills to develop a <b>complete</b> and <b>effective</b> solution/outcome.
<b>2</b>	Learners demonstrate and apply <b>mostly relevant</b> engineering technical skills by applying and using <b>mostly appropriate</b> engineering processes, tools and techniques.  Learners demonstrate and apply engineering technical skills to develop a <b>mostly complete</b> and <b>working</b> solution/outcome.
<b>1</b>	Learners demonstrate and apply <b>basic</b> engineering technical skills by applying and using, <b>in a limited way</b> engineering processes, tools and techniques.  Learners demonstrate and apply engineering technical skills to develop a <b>partially complete</b> solution/outcome.
<b>NYA</b>	No rewardable material.

<b>AO5 Manage and evaluate the project</b>	
<b>Band</b>	<b>Descriptors</b>
<b>3</b>	Learners manage the project, including preparation and planning of <b>a wide range</b> of project stages, time frames and resources.  Learners evaluate <b>a range of</b> their approaches, skills and accomplishments.
<b>2</b>	Learners manage the project, including preparation and planning of <b>a range</b> of project stages, time frames and resources.  Learners evaluate <b>some of</b> their approaches, skills and accomplishments.
<b>1</b>	Learners manage the project, including preparation and planning of <b>a limited range</b> of project stages, time frames and resources.  Learners <b>provide comments</b> on <b>some of</b> their approaches, skills and accomplishments.
<b>NYA</b>	No rewardable material.

## External Quality Assurance

External quality assurance of internal assessment work is carried out to ensure that assessment and grading decisions are in line with required standards. External quality assurance is carried out by External Quality Assurers who are appointed, trained and monitored by NCFE. External Quality Assurers are responsible for monitoring and sampling learner evidence to ensure that internal assessment decisions are valid, reliable, fair and consistent with national standards. Centres are notified of their External Quality Assurer's contact details on registration of learners with NCFE.

For further guidance on evidence submission and the internal and external quality assurance processes, please refer to the guidance on our dedicated qualifications website [www.qualhub.co.uk](http://www.qualhub.co.uk).

### Internal submission attempts

Learners will only have **two** submission attempts.

#### First submission:

Learners should only submit the project when it has been completed in full. The Assessor will assess the project holistically, selecting the appropriate band for each Assessment Objective based on all evidence submitted.

Once the work has been assessed, graded and internally quality assured, the grade should be submitted to NCFE via the Portal. This will be classed as the first submission. The submitted grade will trigger the first external quality assurance visit. It is recommended that centres plan this visit into timetables and confirm the date with the External Quality Assurer at the earliest opportunity.

Ahead of the visit, the External Quality Assurer will select a number of completed internal synoptic projects from which to sample assessment decisions and determine whether the descriptors have been applied consistently and in accordance with the qualification specification. If the External Quality Assurer agrees with the assessment decisions, they will bank all of the submitted grades. If the External Quality Assurer determines that the grading is too harsh, too lenient or inconsistent from one learner to the next, they will reject the grades. In this situation, the centre would be required to assess, grade and internally quality assure all learner work again. The External Quality Assurer will then bank the resubmitted grades. Assessors can provide learners with feedback to support them with their second submission, should this be required.

Centres are strongly advised to arrange a date early for a second visit with the External Quality Assurer, to ensure they receive the visit when they need it.

#### Second submission:

Learners will have **one** opportunity to resubmit the internal assessment after the first attempt and this will be classed as the **second** submission for the same internal synoptic project assessment brief. The **second** submission should be used for learners who receive a 'Not Yet Achieved' for their first submission or wish to improve their grades.

Work revised and resubmitted by learners will again need to be assessed, graded, internally quality assured and submitted to NCFE, ready for a second visit from the External Quality Assurer. If a learner receives a 'Not Yet Achieved' for the **overall grade** on the **second** submission, the learner **will not achieve the internal assessment and therefore will not achieve the overall qualification**. Only once the internal assessment grade has been banked and the external assessment completed will a centre be able to claim certification of the qualification for learners.

## Documentation

# Declaration of authenticity

<b>Year:</b>	
<b>Qualification name and number:</b>	

<b>Learner name:</b>	
<b>First/second submission:</b>	
<b>Learner declaration:</b>	
I certify that the work submitted for this internal synoptic project is my own. I have clearly referenced any sources used in the work. I understand that false declaration is a form of malpractice.	
<b>Learner signature:</b>	
<b>Date:</b>	

<b>Assessor name:</b>	
<b>Assessor declaration:</b>	
I certify that the work submitted is the learner's own. The learner has clearly referenced any sources used in the work. I confirm that all work was conducted under conditions designed to assure the authenticity of the learner's work.	
<b>Assessor signature:</b>	
<b>Date:</b>	

# Record of learner observation

<b>Learner name:</b>	
<b>Assessor name:</b>	
<b>Qualification name and number:</b>	
<b>Date and time of observation:</b>	

<b>Description of the learner's activity.</b>	<b>Assessment objective (AO) met:</b>
<b>Please include:</b> the people present what was observed what the learner did.	

<b>Assessor signature:</b>		<b>Date:</b>	
<b>Learner signature:</b>		<b>Date:</b>	

# Assessor feedback to learner

<b>Learner name:</b>			
<b>Assessor name:</b>			
<b>Qualification name and number:</b>			
<b>Please list the assessment objectives which were achieved:</b>			
<b>Feedback from assessor to learner:</b>			
<b>Comments from learner:</b>			
<b>Has the learner achieved or not yet achieved?</b>			
<b>Any further actions? (Please initial and date once actions have been completed):</b>			
<b>Assessor signature:</b>		<b>Date:</b>	
<b>Learner signature:</b>		<b>Date:</b>	