



Non-Exam Assessment (NEA)

NCFE Level 1/2 Technical Award in Engineering (603/7006/3)

Learner version

October 2024 release

v1.0

Past paper

Introduction

The non-exam assessment (NEA) is a formal synoptic assessment that requires you 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 you to demonstrate an integrated connection and coherence between the different elements of the qualification.

The NEA will contribute **60%** towards the overall qualification grade; therefore, it is important that you produce work to the highest standard that you can. You must not start the NEA until you have been taught the full course, to ensure that you are in the best position to complete the NEA successfully.

What is synoptic assessment?

Synoptic assessment is an important part of a high-quality vocational qualification because it shows you have achieved a holistic understanding of the sector. It also shows that you can make effective connections between different aspects of the subject content and across the breadth of the assessment objectives (AOs) 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 they 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 you to show that you 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 you to make links between elements of the course and to demonstrate how you have integrated and applied your increasing knowledge and skills.

As you progress through the course, you will use and build upon knowledge and skills learnt across units. The NEA will test your ability to respond to a real-world situation.

Information for learners

Introduction

The NEA will be assessed holistically using a levels of response marking grid and against five integrated AOs. These AOs and their weightings are shown below.

Assessment objectives (AOs)
AO1: Recall knowledge and show understanding The emphasis here is for learners to recall and communicate the fundamental elements of knowledge and understanding. 20 marks (16.7%)
AO2: Apply knowledge and understanding The emphasis here is for learners to apply their knowledge and understanding to real-world contexts and novel situations. 16 marks (13.3%)
AO3: Analyse and evaluate knowledge and understanding The emphasis here is for learners to develop analytical thinking skills to make reasoned judgements and reach conclusions. 16 marks (13.3%)
AO4: Demonstrate and apply relevant technical skills, techniques and processes 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. 60 marks (50%)
AO5: Analyse and evaluate the demonstration of relevant technical skills, techniques and processes The emphasis here is for learners to analyse and evaluate the essential technical skills, processes, tools and techniques relevant to the vocational sector. 8 marks (6.7%)

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Learner instructions

- Read the project brief carefully before you start the work.
- You **must** clearly identify and label 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 timed session.

Learner information

- This NEA will assess your knowledge and understanding from across the qualification.
- The maximum mark for this NEA is **120**.
- The maximum completion time for this NEA is **18 hours** (plus **2 hours** preparation and research time).
- All of the work you submit **must** be your own.

Please complete the details below clearly and in BLOCK CAPITALS.

Learner name

Centre name

Centre number

Learner number

Learner signature

Preparation and research task

Maximum time: 2 hours

In addition to the allocated assessment time for this NEA, you are permitted to spend a maximum of **2 hours** to undertake research and develop a research pack that you can refer to during the formal NEA assessment time. During this 2-hour period, you may access all learning materials, the internet and other published materials.

You should use this time to create your own research pack, and it is this pack alone that you may use during the allocated time given to the NEA. This is the only support material that is permitted during the completion of NEA tasks (unless otherwise stated within each of the task instructions).

All research and data used in your final NEA **must** be referenced appropriately. As a minimum this **must** include the following:

- the use of quotation marks to clearly identify any passages not of your own words
- date accessed (websites only)
- name of source / author.

Evidence requirements: research pack of no more than four sides of A4, font size 12 (if word processed), to be returned to your assessor at the end of each task / session and submitted with the completed NEA.

Formal non-exam assessment (NEA)

Maximum completion time

You have been provided with a total of **18 hours** to complete this NEA (plus **2 hours** for preparation and research).

You may use some or all of the time provided for each task.

You are allowed to use any remaining time allocated to one task to rework previous tasks up to the maximum time allowed.

You are not allowed to exceed the total number of hours.

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

Project brief

You are an industrial designer who works for a household furniture company. The company supplies office and home accessories.

The company has asked you to design and then produce a working scale model (1:1) of a tablet holder to attach to a desk or table.

The main purpose of the working scale model is for you to demonstrate how an actual tablet holder will work. Some measurements have not been specified. These are for you to determine based on how your tablet holder needs to function.

Your working scale model must show that the actual tablet holder will:

- be universally compatible with devices that have a screen size between 4.5 inches (114 mm) and 12.9 inches (328 mm), not including the bezel or surrounding border
- have pivot points which allow the tablet holder to move as needed to reach the most comfortable viewing position
- be capable of attaching to any horizontal surface, like a desk or table, that is up to 52 mm thick.

The company has supplied you with additional drawings.

Figure 1 and **Figure 2** show examples of the main moving parts of a tablet holder.

Figure 3 is a sketch and is to help in the construction of your working scale model.

Project instructions:

The company have asked you to present a full portfolio of evidence which is to include:

1. Materials research and materials selected
2. Hand-drafted engineering drawings
3. Engineering drawings using computer-aided design (CAD) software
4. Production plan
5. Manufacture of the working scale model
6. Evaluation of your final product.

Please turn over for the Figures.

Figure 1: pivot point and tablet clamp examples

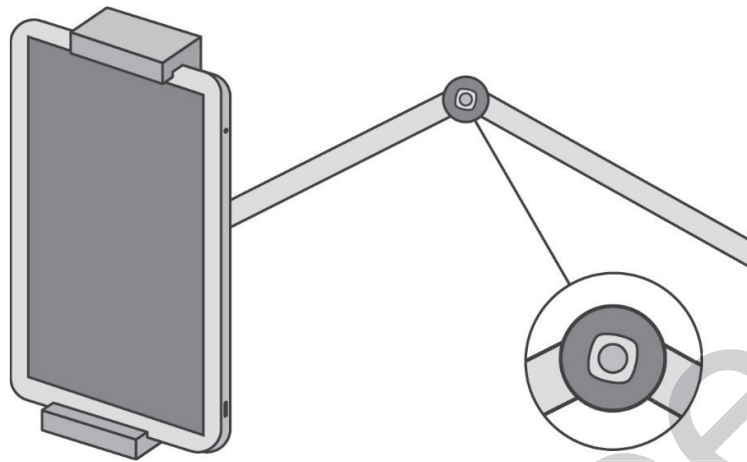


Figure 2: base clip example

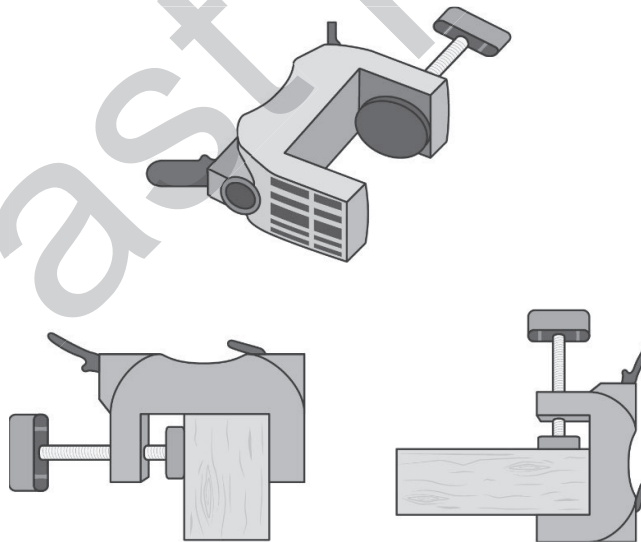
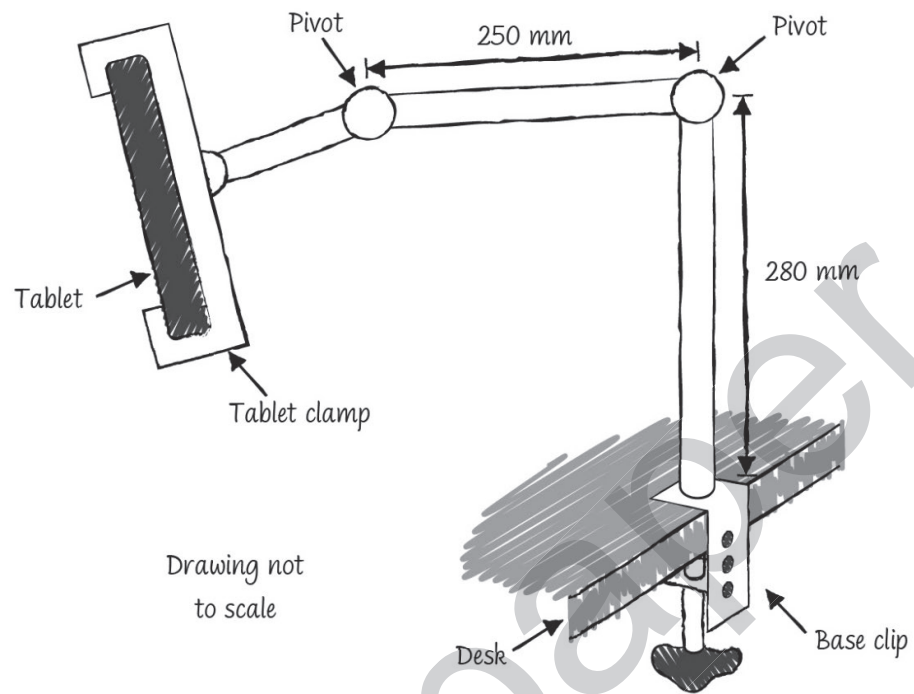


Figure 3: freehand sketch of a tablet holder



Assessment tasks

Task 1

Research and selection of materials and tools / machinery	
Maximum time	1 hour 30 minutes
Content areas assessed	1. Engineering disciplines 4. Properties, characteristics and selection of engineering materials 5. Engineering tools, equipment and machines
Assessment objectives (AOs)	AO1 – 4 marks AO2 – 4 marks AO3 – 4 marks
You are required to: Research and select the materials, tools and / or machinery you will use to manufacture your working scale model of a tablet holder. You must show that you have researched and selected: - materials required to manufacture the working scale model - tools and / or machinery required to manufacture the working scale model. You must show: - supporting information to justify the selection of materials, tools and / or machinery. You are permitted to use the internet for this task. You must reference all sources used. [12 marks]	
Evidence	You could use the following formats to provide evidence for your research: - written report - annotated diagrams - digital presentation. You must also submit your internet browsing history of sites used to support your response to the task.

Task 2

Hand-drafted engineering drawings	
Maximum time	2 hours 30 minutes
Content areas assessed	2. Applied science and mathematics in engineering 3. Reading engineering drawings 6. Hand-drafted engineering drawings
Assessment objectives (AOs)	AO1 – 8 marks AO4 – 12 marks
You are required to: Provide a short description of the requirements of British Standard (BS) 8888, needed to complete this assessment. You can refer to this throughout the project. Create hand-drafted engineering drawings of the working scale model of a tablet holder as the brief requires. [20 marks]	
Evidence	Your evidence must include: • your description of BS 8888 • hand-drafted engineering drawings of the working scale model

Task 3

CAD-produced engineering drawings	
Maximum time	2 hours 30 minutes
Content areas assessed	2. Applied science and mathematics in engineering 3. Reading engineering drawings 7. CAD engineering drawings
Assessment objectives (AOs)	AO1 – 8 marks AO4 – 12 marks
You are required to: Use CAD software to create engineering drawings of the hand-drafted engineering drawings that you created in Task 2. Your drawings must apply a layout that is recognised within the engineering industry, following British Standard 8888. [20 marks]	
Evidence	Your evidence must include: CAD software engineering drawings of the working scale model of a tablet holder.

Task 4

Production plan	
Maximum time	4 hours
Content areas assessed	5. Engineering tools, equipment and machines 8. Production planning techniques
Assessment objectives (AOs)	AO2 – 12 marks AO3 – 12 marks
You are required to: Create a production plan for your working scale model of a tablet holder, based on the drawings you developed in Tasks 2 and 3. Your plan must evidence each of the following areas: • tools and equipment requirements • health and safety measures • quality control measures • time plan (including timescales and deadlines for completion of tasks). You must also justify each of the planning decisions made. You are permitted to use the internet for this task. You must reference all sources used. [24 marks]	
Evidence	Your evidence must include: • the production plan of your working scale model. You could use a range of the following to provide evidence for your plan: • written report • annotated diagrams • digital presentation • screenshots. You must also submit your internet browsing history of sites used to support your response to the task.

Task 5

Manufacture of the working scale model	
Maximum time	6 hours
Content areas assessed	9. Applied processing skills and techniques
Assessment objectives (AOs)	AO4 – 36 marks
You are required to: Create a working scale model (1:1) of the tablet holder, using the drawings and production plan you developed in Tasks 2 to 4. You must use suitable processing skills and techniques. Test the functionality of the working scale model. Your working scale model must: • meet the needs of the brief • follow your hand-drafted and CAD-produced drawings • be fully functional. You must provide: • your working scale model • evidence of production processes, skills, and techniques • evidence of testing the working scale model. [36 marks]	
Evidence	You could use a range of the following formats to provide evidence of your production process: • digital presentation • written report • annotated screenshots • annotated images.

Task 6

Summative evaluation	
Maximum time	1 hour 30 minutes
Content areas assessed	8. Production planning techniques
Assessment objectives (AOs)	AO5 – 8 marks
You are required to: Evaluate your final product. Your evaluation must consider: • the success and functionality of the final working scale model • how your final working scale model met the brief • how suitable your final working scale model is for use in the specified industry • how you could improve your final working scale model in relation to the brief. [8 marks]	
Evidence	You could use the following formats to provide evidence of your evaluation: • annotated screenshots • written report.

Documentation

Declaration of authenticity

The learner and assessor **must** complete the form at the end of the assessment and before any marking takes place. The assessor **must** check the number of tasks submitted by the learner is accurate.

The completed form **must** be retained within the centre and is not to be sent to the moderator or NCFE unless specifically requested.

Learner name:	
Tasks submitted:	
Learner declaration:	
I certify that the work submitted for this NEA is my own. I have clearly referenced any sources used in the work. I understand that false declaration is a form of malpractice.	
Learner signature:	
Date:	

Assessor name:	
Assessor declaration:	
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.	
Assessor signature:	
Date:	

Note: once completed, the declaration of authenticity **must** be stored securely within the centre, in line with NCFE Regulations for Conduct of NEA – Non-Exam Assessment. A copy of this declaration form **must** be made available to NCFE upon request.

GDPR consent

Section A: this section must be completed by the learner

- NCFE may select your work for use at teacher training or standardisation events. Your work will be anonymised by removing your name. All materials will be reviewed regularly and will be removed if no longer required.
- NCFE may select your work at some point in the future for use in teaching and learning resources published on the NCFE website. Your work would be anonymised by removing your name. All materials will be reviewed regularly and will be removed if no longer required.
- You understand that this agreement may be terminated at any time through written request.
- For further details about how we process your data, please refer to the [legal information section on the NCFE website](#).

Please tick the option that applies, and sign and date the boxes below:

Tick one only	
I consent to my work being used in the manner detailed in section A	
I do not consent to my work being used in the manner detailed in section A	
Learner signature:	
Date:	

Section B: this section must be completed by any participants who feature in the work

Over 13 years old

- I am over 13 and I give my permission for my video and / or photographic image to be used as detailed in section A (above).

Under 13 years old

- I give my permission for my child's video and / or photographic image to be used as detailed in section A (above).

Name of participant (printed)	Participant / Parent / Carer signature	Date

If any of the participants have declined permission, please tick here: ☐