



**basic education**

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Department:  
Basic Education  
**REPUBLIC OF SOUTH AFRICA**

# **CIVIL TECHNOLOGY (CONSTRUCTION)**

## **GUIDELINES FOR PRACTICAL ASSESSMENT TASKS**

**GRADE 12**

**2024**

**These guidelines consist of 15 pages.**

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**SECTION 1****1. INTRODUCTION**

The following 18 Curriculum and Assessment Policy Statement subjects contain a practical component must include a practical assessment task (PAT).

- **AGRICULTURE:** Agricultural Management Practices, Agricultural Technology
- **ARTS:** Dance Studies, Design, Dramatic Arts, Music, Visual Arts
- **SCIENCES:** Computer Applications Technology, Information Technology, Technical Sciences, Technical Mathematics
- **SERVICES:** Consumer Studies, Hospitality Studies, Tourism
- **TECHNOLOGY:** Civil Technology, Electrical Technology, Mechanical Technology, Engineering Graphics and Design.

A practical assessment task (PAT) mark is a compulsory component of the final promotion mark for all candidates offering subjects that have a practical component and counts 25% (100 marks) of the end-of-year examination mark. The PAT is implemented across the first three terms of the school year. This is broken down into different phases or a series of smaller activities that make up the PAT. The PAT allows for learners to be assessed regularly during the school year and it also allows for the assessment of skills that cannot be assessed in a written format, e.g. test or examination. It is therefore important that schools ensure that all learners complete the practical assessment tasks within the stipulated period to ensure that learners are resulted at the end of the school year. The planning and execution of the PAT differ from subject to subject.

## SECTION 2

### 2. GUIDELINES FOR THE TEACHER (These guidelines must be explained clearly to the learners.)

#### 2.1 The structure of the PAT for Civil Technology

The PAT accounts for the skills the learner has mastered. The PAT is assessed at intervals and requires the learner to engage in multiple practical sessions. During these weekly sessions, skills such as simulation, experimentation, hand skills, tool skills, machine skills and workshop practice are honed and perfected to the point where the learner may engage in the tasks set out for that particular term. The PAT accounts for 25% of the learner's promotion mark.

#### 2.2 Management of the PAT

The PAT should commence in Term 1, as this is a lengthy and drawn-out process and CANNOT be left to the last minute. The model should be done over THREE terms starting in Term 1 and Phase 1 should be done concurrently with the model in Term 1.

- (a) Phase 1 must be completed, marked and internally moderated by the end of Term 1.
- (b) Phase 2 must be completed, marked and internally moderated by **1 September 2024** to allow sufficient time for external moderation.
- (c) All the phases of the PAT are to be kept safely until the moderation process is completed at all levels (both provincial and national moderation).
- (d) **The internal moderator/departmental head must conduct moderation of the PAT throughout the year.**
- (e) It is imperative that the criteria are adhered to from the beginning, as this will form the basis for assessment.
- (f) Teachers cannot penalise learners on areas that are not included in the initial criteria.
- (g) When learners are selected during moderation (face moderation), they may be required to showcase their practical or drawing skills and knowledge of the content captured/gained in the practical assessment task..

All **teachers** must **design a pacesetter** in line with the time frames specified in the PAT to indicate the completion dates for the different phases of the PAT. The teacher must manage this process to avoid crisis management and unnecessary stress closer to the completion date of the PAT.

The submission dates for the different phases of the PAT, as indicated in the pacesetter, should be given to the learners in writing.

#### 2.3 Administration of the PAT

The PAT should be based on real-life situations and should be administered and completed under controlled conditions.

After studying the guidelines teachers must fully explain the requirements of the different phases of the PAT and the criteria, as indicated in the assessment tools and mark schedules, to the learners. This will ensure that learners and teachers have a common understanding of the assessment tools and what is expected of the learners.

Teachers are requested to make copies of **SECTIONS 3 to 5** of this document and hand it to the learners not later than the **first week after the opening of schools in January 2024**.

**The products/models should not leave the classroom/workshop and must always be kept in a safe place when learners are not working on them.**

## **2.4 Assessment and moderation of the PAT**

The PAT for Grade 12 is externally set and externally moderated, but internally assessed by the teacher and moderated by the internal moderator/departmental head.

## **2.5 Assessment**

Frequent developmental feedback is needed to guide and support the learner to ensure that the learner is on the right track.

Both formal and informal assessments should be conducted on the different phases of the PAT. Informal assessment may be conducted by the learner himself or herself, by a peer group, or by the teacher. Formal assessment should always be conducted by the teacher and the results will be recorded.

The teacher must consider the requirements of the assessment of all the phases of the PAT and therefore plan the assessment programme of the PAT accordingly.

## **2.6 Moderation**

During moderation of the PAT all phases of the PAT must be presented to the internal moderator as well as the external moderator.

Where required, the moderator should be able to call the learner to explain the function and working principles and also request the learner to exhibit the skills acquired during practical sessions for moderation purposes.

**SECTION 3****3. GUIDELINES FOR THE LEARNERS: CONSTRUCTION TASKS**

Learner's name: \_\_\_\_\_

Time Allowed: Term 1 to Term 3

The practical assessment task (PAT) consists of TWO phases to be completed over THREE terms.

The PAT should be done over THREE terms starting in Term 1 with Phase 1 and Phase 2.

**TIME SCHEDULE FOR THE COMPLETION OF THE PAT:**

It is recommended that learners and teachers use this time schedule to finish the PAT in the allocated time.

<b>TERM</b>	<b>WORK TO BE DONE</b>	
Term 1	Phase 1	Joining of a roof truss to a brick wall by means of a galvanised hoop-iron strap
Term 1	Phase 2 (Part 1)	Research, drawings and cutting list
Term 2	Phase 2 (Part 2)	Making of wooden legs, baseplates, formwork and cutting of reinforcement
Term 3	Phase 2 (Part 3)	Casting of concrete, striking of formwork, joining and finishing

**3.1 Instructions to the learner**

- This practical assessment task (PAT) counts 25% of your final promotion mark.
- All work you produce must be your own effort.
- Use your discretion where dimensions and/or information have been excluded or omitted.
- Where available you may use electronic equipment, e.g. cellphones, cameras and digital cameras to document your progress.
- **The product/model should NOT leave the classroom/workshop and must be kept in a safe place at all times when you are not working on it.**

**3.2 Phase 1: Joining of a roof truss to a brick wall by means of a galvanised hoop-iron strap****Term 1****Duration of Phase 1: 5 hours per learner****Mark allocation: 20 marks****TASK:**

Construct the foot of a close-coupled roof truss and join the roof truss to a one-brick wall using a wall plate and a galvanised hoop-iron strap. The galvanised hoop-iron strap should be built into the wall. The wall should be built with lime and sand.

**Specifications:**

- The one-brick wall should be  $3\frac{1}{2}$  bricks long and 5 courses high with stopped ends.
- Use 114 mm x 38 mm timber to make the foot of the roof truss and wall plate.
- The overhang is 200 mm.
- The anchor depth of the galvanised hoop-iron strap should be 3 brick courses from the top.

**3.3 Marking guidelines for Phase 1**

<b>ASSESSMENT CRITERIA FOR THE JOINING OF A ROOF TRUSS TO A BRICK WALL BY MEANS OF A GALVANISED HOOP-IRON STRAP</b>				
<b>LEARNER'S NAME AND SURNAME:</b> _____				
<b>ASSESSMENT CRITERIA</b>	<b>GOOD/ EXCELLENT</b>	<b>AVERAGE</b>	<b>POOR/NOT ATTEMPTED</b>	<b>MODERATED MARK</b>
	<b>8-10</b>	<b>4-7</b>	<b>0-3</b>	<b>0-10</b>
Marking, cutting and joining members of the roof truss and wall plate				
Measure and mark out the layout of the one-brick wall				
Mixing of ingredients				
Building of a one-brick wall using the correct course				
Measuring, cutting, and bending of the galvanised hoop-iron strap				
Galvanised strap correctly anchored				
Joining the roof truss to the wall				
Quality of craftsmanship and plumbness of roof truss to the wall				
<b>TOTAL OUT OF 80</b>				
<b>CONVERTED TOTAL OUT OF 20</b> <i>(Total ÷ 4)</i>				

*It is recommended that video clips and photos of the learner performing the task should be recorded and kept electronically at the school on a disc or memory stick (backup) to be provided as evidence during moderation.*

### 3.4 Phase 2: Table with reinforced concrete top and wooden legs

**Term: 1, 2 and 3**

**Duration: 20 hours**

#### **TASK:**

You are required to design and make a table with a reinforced concrete top with wooden legs. The concrete top and wooden legs should be joined by means of baseplates and cast-in anchors.

#### **INSTRUCTIONS:**

- Research different types of designs of tables focusing on the following:
  - Wooden legs
  - Concrete table tops
  - Joining wood and concrete by means of baseplates and cast-in anchors
- Draw (freehand or with instruments) at least THREE designs of tables with a reinforced concrete top and wooden legs joined by baseplates and cast-in anchors.
- Select the preferred design and draw a scale drawing of the front, top and left views (first-angle orthographic working drawings) of the table that you are going to make. Show ALL measurements/dimensions and joining methods on your drawing.
- List all material needed to complete the table.
- Compile a cutting list for the formwork for the table top and timber used for the base plates and legs.
- Calculate the quantity of concrete needed for the table top.
- Compile a schedule to show the stages and timeframes for making the table.

#### **Use the following specifications:**

- The table should consist of the following:
  - Reinforced concrete table top
  - Baseplates and cast-in anchors
  - Wooden legs
- A template of the base plate should be used to accurately align and secure the cast-in anchors in the freshly cast concrete.
- Formwork must be made for the casting of the table top.
- Reinforcement for/of the concrete table top must be added for strength.
- Any suitable timber can be used for the baseplates and legs.
- Learners should use their innovation and creativity in making the table.

**NOTE:** Evidence of research, drawings, cutting list, templates, stages of making and striking of formwork as well as the model should be available for moderation.

**3.5 Marking guidelines for Phase 2**

<b>ASSESSMENT OF THE TABLE WITH REINFORCED CONCRETE TOP AND WOODEN LEGS</b>				
<b>LEARNER'S NAME AND SURNAME:</b> _____				
<b>ASSESSMENT CRITERIA</b>	<b>GOOD/ EXCELLENT</b>	<b>AVERAGE</b>	<b>POOR/NOT ATTEMPTED</b>	<b>MODERATED MARK</b>
<b>PLANNING</b>	<b>8–10</b>	<b>5–7</b>	<b>0–4</b>	<b>0–10</b>
Research on different types of tables focusing on using wooden legs, concrete table tops and joining wood and concrete by means of baseplates and cast-in anchors (Minimum 2 x A4 pages on each criterion)				
THREE freehand/instrument drawings of different designs of tables with reinforced concrete tops and wooden legs joined by baseplates and cast-in anchors				
	<b>4–5</b>	<b>2–3</b>	<b>0–1</b>	<b>0–5</b>
A list of all material needed to complete the table				
Compiling of a cutting list for the formwork				
Calculating the quantity of concrete				
Compiling a schedule of stages and time frames for the making of the table				
<b>TOTAL: 40</b>				
<b>SCALE DRAWINGS OF PREFERRED DESIGN</b>	<b>4–5</b>	<b>2–3</b>	<b>0–1</b>	<b>0–5</b>
Correctness of front view (including hidden detail of joining method)				
Correctness of top view				
Correctness of left view				
Dimensions indicated on views				
<b>TOTAL: 20</b>				
<b>FORMWORK</b>	<b>8–10</b>	<b>4–7</b>	<b>0–3</b>	<b>0–10</b>
Marking and cutting of formwork for the reinforced concrete table top				
Marking, drilling of holes for screws and joining of formwork members				
Sealing of formwork				
<b>TOTAL: 30</b>				
<b>WOODEN BASEPLATES AND LEGS</b>	<b>8–10</b>	<b>4–7</b>	<b>0–3</b>	<b>0–10</b>
Marking, cutting, drilling and aligning the baseplates				
Marking and cutting out of wooden legs				
Joining the baseplates to the legs				
<b>TOTAL: 30</b>				
<b>REINFORCEMENT</b>	<b>8–10</b>	<b>4–7</b>	<b>0–3</b>	<b>0–10</b>
Placing of reinforcement				
<b>TOTAL: 10</b>				
<b>CONCRETE</b>	<b>8–10</b>	<b>5–7</b>	<b>0–4</b>	<b>0–10</b>
Mixing of concrete				
Placing, compacting, and curing of concrete with cast-in anchors in appropriate place				
<b>TOTAL: 20</b>				

<b>ASSESSMENT CRITERIA</b>	<b>GOOD/ EXCELLENT</b>	<b>AVERAGE</b>	<b>POOR/NOT ATTEMPTED</b>	<b>MODERATED MARK</b>
<b>STRIKING OF FORMWORK</b>	<b>4-5</b>	<b>2-3</b>	<b>0-1</b>	<b>0-5</b>
Striking of formwork members without damage to concrete table top				
<b>TOTAL: 5</b>				
<b>FINISHING OF PRODUCT</b>	<b>4-5</b>	<b>2-3</b>	<b>0-1</b>	<b>0-5</b>
Finishing of external surface of the concrete table top				
Finishing of legs and securing baseplates and legs to the table top				
<b>TOTAL: 10</b>				
<b>FINAL PRODUCT</b>	<b>4-5</b>	<b>2-3</b>	<b>0-1</b>	<b>0-5</b>
Neatness, appearance, and functionality of the final product				
<b>TOTAL: 5</b>				
<b>INNOVATION AND CREATIVITY</b>	<b>4-5</b>	<b>2-3</b>	<b>0-1</b>	<b>0-5</b>
The learner enhances his/her chosen design by adding features to improve the appearance and functionality of the table				
<b>TOTAL: 5</b>				
<b>GENERAL ASPECTS</b>	<b>4-5</b>	<b>2-3</b>	<b>0-1</b>	<b>0-5</b>
Adherence to deadlines				
<b>TOTAL: 5</b>				
<b>TOTAL OUT OF 180</b>				
<b>CONVERTED TOTAL OUT OF 80</b> <i>(Total ÷ 2.25)</i>				

3.6 Composite mark sheet for Construction PAT

SCHOOL NAME AND LOGO		PHASE 1		PHASE 2 (MODEL)										TOTAL						
		TERM 1		PART 1 TERM 1		PART 2 TERM 2			PART 3 TERM 3											
		JOINING OF A ROOF TRUSS TO A BRICK WALL	MODERATED MARK	PLANNING	SCALE DRAWINGS OF PREFERRED DESIGN	FORMWORK	BASEPLATE AND LEGS	REINFORCEMENT	CONCRETE	STRIKING OF FORMWORK	FINISHING OF PRODUCT	FINAL PRODUCT	INNOVATION AND CREATIVITY	GENERAL ASPECTS	TOTAL PHASE 2	MODERATED MARK	CONVERTED MARK	MODERATED MARK	TOTAL: (PHASE 1 + PHASE 2)	MODERATED MARK
NO	SURNAME AND NAME OF LEARNER	20	20	40	20	30	30	10	20	5	10	5	5	5	180	180	80	80	100	100
1																				
2																				
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				
<b>TOTAL</b>																				
<b>TOTAL</b>																				

\_\_\_\_\_  
Signature of (Teacher)

\_\_\_\_\_  
Date (dd/mm/yy)

\_\_\_\_\_  
Signature of (Moderator)

\_\_\_\_\_  
Date (dd/mm/yy)



## SECTION 4

### 4. OTHER RELEVANT INFORMATION

#### 4.1 Absence/Non-submission of task (What are the consequences?)

The absence of a PAT will be dealt with in accordance with the regulations as stipulated in the *National Policy on Protocol for Assessment Grades R–12*, page 6, Chapter 3, paragraphs 7 and 8.

The *National Protocol for Assessment Grades R–12*, Chapter 3, paragraph 8, subsection (4) clearly states that the absence of a practical assessment task mark will result in the candidate, registered for that particular subject, receiving an incomplete result.

#### 4.2 Requirements for presentation

The following must be presented by the candidate for assessment and moderation:

- Phase 1: Mark sheet with evidence
- Phase 2: Evidence of planning and scale drawings of the model
- Phase 2: Mark sheet with completed model
- The candidate's name and class must be clearly indicated on all components of the PAT
- Completed Declaration of Authenticity with school stamp

The following document must be presented by the teacher for moderation:

- A composite mark sheet (ONE composite mark sheet comprising all candidates' names and marks for all phases)

#### 4.3 Recommended time frames for the completion of the PAT

##### Term 1:

- Phase 1 and Phase 2 (Part 1)

##### Term 2:

- Phase 2 (Part 2)

##### Term 3:

- Phase 2 (Part 3)

**The product/model should be manufactured in the workshop under the teacher's supervision.**

**NOTE:** The teacher should properly plan and manage the available resources so that all learners will be busy with some part of the tasks throughout the year. **PAT tasks must be completed, marked, and internally moderated by 2 September 2024**

**4.4 Declaration of authenticity**

NAME OF THE SCHOOL: .....

NAME OF LEARNER:.....

NAME OF TEACHER: .....



**I hereby declare that the practical assessment task submitted for assessment is my own, original work and it has not been submitted for moderation previously.**

\_\_\_\_\_  
**SIGNATURE OF LEARNER**

\_\_\_\_\_  
**DATE (dd/mm/yy) (SUBMITTED)**

**As far as I know, the above declaration by the candidate is true and I accept that the work offered is his/her own.**

\_\_\_\_\_  
**SIGNATURE OF TEACHER**

\_\_\_\_\_  
**DATE (dd/mm/yy)**

**SECTION 5****5. CONCLUSION**

On completion of the practical assessment task learners should be able to demonstrate their understanding of the built environment/industry, enhance their knowledge, skills, values and reasoning abilities as well as establish connections to life outside the classroom and address real world challenges. The PAT furthermore develops learner's life skills and provides opportunities for learners to engage in their own learning.