

# A THREE YEAR CURRICULUM RECOVERY GUIDELINE

*Every child is a National Asset*

## Mediation of the National Recovery ATP

### Electrical Technology Digital Electronic, Electronics and Power Systems

**Grade 10 - 12**

Implementation date : January 2021



basic education  
Department:  
Basic Education  
REPUBLIC OF SOUTH AFRICA



# Presentation Outline

1. Purpose
2. Introduction
3. Vision and Rationale
4. Principles
5. Underpinning assumptions
6. Key Recovery Strategies
7. Amendment to the Grade 10-12 Content Map for Electrical Technology: Digital Systems, Electronics and Power Systems
8. Amendments to the Annual Teaching Plan;
9. Amendments School Based Assessment (SBA)
10. Conclusion

# Purpose

The Three Year Curriculum Recovery Guideline outlines the development of the three year recovery ATPs to manage learning loss over a period of three years **2021 Recovery ATPs as stipulated in Circular S13 of 2020.**



# Introduction



COVID 19 led to losses in teaching and learning time due to:

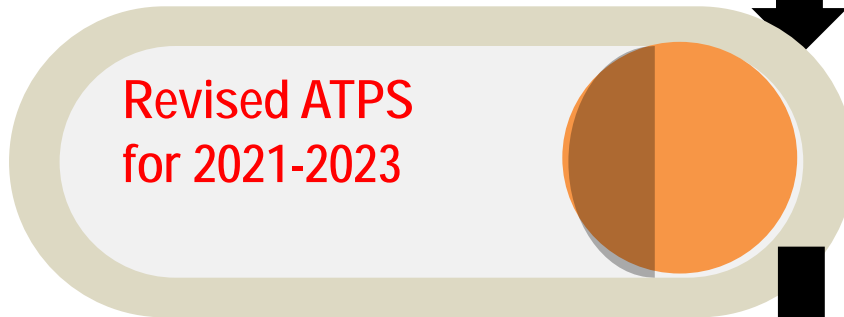
- the lockdown period and **phased reopening** of schools,
- Alternating time tabling models and
- the related health and safety **protocols**.

Furthermore, the revision of the school calendar **and** intermittent closure of many schools negatively **impacted** the **ability** of teachers to **implement** the **revised 2020 ATPs** as envisioned.

To mediate the impact and support teachers in managing teaching, assessment and learning within the reduced **time**, the DBE in 2020 implemented:

- **Circular S3** that outlined and guided teachers to conduct context specific **subject trimming**, in consultation with subject advisors.
- **National Assessment Circular 02** and **Circular E 11** to guide school-based assessment in phases and subjects

# Vision 2024

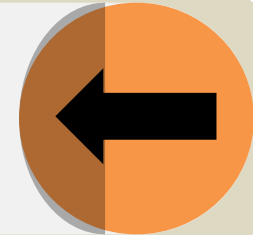


- Conceptualisation of a Curriculum Strengthening process that encompasses Competencies required for the Changing World;
- Develop Revised Modernised Curriculum Policy Statements in alignment with amended CAPS Section 4 and 2020 Assessment Circulars;
- Develop an Assessment for Learning pedagogical strategy, and
- Develop Educator Mediation Programmes.

# Rationale for the Guideline

To outline the process to develop the **Three-year Recovery Plan** in managing the learning losses over a period of three years

RATIONALE FOR  
THIS GUIDELINE



LEARNING LOSSES



the purpose of this exercise  
are defined as:

Learning Outcomes (*content, skills & competencies, values & attitudes*) as stated in the revised ATPs not achieved during the 2020 school year.



# Principles

1

Use of the 2020 Curriculum Recovery Framework as the base document

2

Learning losses inform the Three Year Recovery Plans for School –based Assessment

3

Management of the learning losses and the School Based Recovery Plans

4

Create opportunities through adjusted ATPs to strengthen pre-knowledge, consolidation, revision, and deeper learning

5

Entrench Assessment for Learning as a Pedagogical Approach to address the learning losses





# Principles

6

The 2021 Recovery ATPs maintains the use of current LTSM and resources already available in the system.

7

Content topics removed in 2020 were not automatically returned in the 2021 Recovery ATPs.

8

Fundamental and core topics were retained in the Recovery ATPs

9

To guide and support effective teaching and learning





# Underpinning Assumptions



1

1

## ASSUMPTION 1

All learners will return to school from day 1 of the 2021 academic year and norm-times as stipulated in the CAPS will be adhered to for the entire school year;

2

2

## ASSUMPTION 2

Learning losses due to COVID-19 across grades and subjects will vary from school to school, class to class and even within classes.

3

3

## ASSUMPTION 3

Each Teacher will have a record of learning losses and Departmental Heads and Subject Advisors will monitor progress in learning loss recovery;



# Underpinning Assumptions



4

4

## ASSUMPTION 4

All schools will develop & implement school-based support programmes for all grades/years with particular focus on all the exit grades/years (3, 6, 9 and 12) throughout the three-year period.

5

5

## ASSUMPTION 5

All Circulars related to the 2020 ATPs including SBA to be withdrawn and revised to align to the 2021 ATPs.

6

6

## ASSUMPTION 6

Schools have systems in place to manage the possibility of a second wave of the pandemic in Q1 and Q3 of the 2021



# The Development of the 2021 Recovery ATPs

The Recovery ATPs are aligned to the:

- 2021 School calendar
- Abridged S4 of CAPS
- Curriculum and assessment principles as prescribed in the CAPS policy for **Electrical Technology**.

# **Amendments to the Content Map for Grades 10-12 Electrical Technology**

# Digital Electronics

# Summary: Amendments to the Content Overview for the Phase

**\*Trimmed**

**\* Reorganised**

**\*No amendment**

Grade 10	Grade 11	Grade 12
<b>Occupational Health and Safety</b> Responsibilities, Workshop Rules & Procedures	<b>Occupational Health and Safety</b> Introducing the OHS Act, Machinery Regulations and Electrical Machinery Regulations	<b>No amendments. content reorganised within the time frames allocated</b>
<b>Tools and measuring instruments</b> Tools and how to use them	<b>Tools and measuring instruments</b> Measuring instruments and how to use them	

# Summary: Amendments to the Content Overview for the Phase

Grade 10	Grade 11	Grade 12
<b>Basic Principles of Electricity</b> Introduction of electricity as the core of the subject	<b>Waveforms</b> Introduction of waveforms, pulse technique and wave shaping as an approach to electronics	No amendments.content completed within the time frames allocated
<b>Power Sources</b> Basic power sources such as the battery and how they operate	<b>RLC</b> The effect of AC on Series RLC Circuit	





# Summary: Amendments to the Content Overview for the Phase

Grade 10	Grade 11	Grade 12
<b>Electronic Components</b> Basic electronic components and how they operate	<b>Semiconductor Devices</b> Introduction of components and solid state devices	<b>CONTENT REORGANISED TO BE COMPLETED WITHIN THE TIME FRAMES ALLOCATED.</b>
<b>Logics</b> Boolean Logic and basic Logic gates with their applications	<b>Logics</b> Boolean Logic, Karnaugh Maps, Logic Probes, RTL, TTL and Logic ICs	



# Summary: Content/Topics Amended

GRADE10	Amendment
Tools and Measuring Instruments	Week 2-5 reorganised
Power Sources	Trimmed Week 1:2 subtopics trimmed off Week 3 removed



## **4. Amendments School Based Assessment (SBA)**

# Summary: Amendment to the weighting of tasks

- **SBA Weighting of tasks:** Amended to the ratio of **60:40**
- **Abridged amended S13** aligned to the 2021 School Calendar



# Summary: Revised SBA of Grade 10 & Grades 10 and 11

Term 1	Term 2	Term 3	Term 4
Assignment:50 marks	Term Test:50 marks	Term Test:50 marks	Final Exam:200 marks

## Summary: Revised SBA Grade 12

Term 1	Term 2	Term 3	Term 4
Assignment:50 Marks	Practical Simulation:200 marks	Trial Exam:200 marks	Final Exam:200 marks

# Summary: Revision Final Examination Structure



# Final Examination Structure

- The total mark allocation still remain the same ie 200 marks
- There is one change that has been made on the final structure of the examination:
- A multiple choice question worth 15 marks has been included in the question paper.
- The questions will be from all the topics in the Grade as per the weightings of the topics in the amended/Abbridged Section 4 of the CAPS document.



# Summary: Revision Final Examination

## Structure Grade 10

Topic	Grade 10 (Revised)	
	Percentage	Marks +/- 4
Multiple choice	7.5	15
Occupational Health and Safety	5%	10
Tools and measuring instruments	12.5%	25
Basic Principles of Electricity	20%	40
Power Sources	12.5	25
Electronic Components	15%	30
Logics	15%	30
Principles of Magnetism	12.5%	25
<b>Total</b>	100%	200 Marks



# Summary: Revision Final Examination

## Structure Grade 11

Topic	Grade 11 (Revised)	
	Percentage	Marks +/- 4
Multiple Choice	7.5%	15
Occupational Health and Safety	5%	10
Tools and Measuring Instrument	5%	10
Logics	25%	50
Waveforms	15%	30
RLC	15%	30
Semiconductor Devices	20%	40
Sensors and Transducers	7.5%	15
Total	100%	200 Marks

# Summary: Revision Prep Examination

## Structure Grade 12

Topic	Grade 12 Prep (Revised)	
	Percentage	Marks +/- 4
<b>Multiple Choice</b>	<b>7.5%</b>	<b>15</b>
Occupational Health and Safety	5%	10
Switching Circuits	25%	50
Semiconductor Devices	10%	20
Digital and Sequential Devices	27.5%	55
Microcontrollers	25%	50
<b>Total</b>	<b>100%</b>	<b>200</b> Marks

# Electronics

# Summary: Amendments to the Content Overview for the Phase

Grade 10	Grade 11	Grade 12
<b>Occupational Health and Safety</b> Responsibilities, Workshop Rules & Procedures	<b>Occupational Health and Safety</b> Introducing the OHS Act, Machinery Regulations and Electrical Machinery Regulations	. No amendments Content Reorganised to be completed within the time frames allocated
<b>Tools and measuring instruments</b> Tools and how to use them	<b>Tools and measuring instruments</b> Measuring instruments and how to use them	No amendments Content Reorganised to be completed within the time frames allocated

# Summary: Amendments to the Content Overview for the Phase

Grade 10	Grade 11	Grade 12
<b>Power Sources</b> Basic power sources such as the battery and how they operate	RLC	No amendments Content reorganised to be completed within the time frames allocated
<b>Principles of Magnetism</b> Principles of magnetism and the relevant laws	<b>Sensors and Transducers</b> Sensors and transducers as the interface between real world conditions and electronic circuitry	



# Summary: Amendments to the Content Overview for the Phase

Grade 10	Grade 11	Grade 12
<b>Communication Systems</b> Basic communication principles, antenna systems and modulation	<b>Power Supplies</b>	No amendments Content reorganised to be completed within the time frames allocated
<b>Principles of Magnetism</b> Principles of magnetism and the relevant laws	<b>Sensors and Transducers</b> Sensors and transducers as the interface between real world conditions and electronic circuitry	





# Summary: Amendments to the Content Overview for the Phase

Grade 10	Grade 11	Grade 12
<b>Electronic Components</b> Basic electronic components and how they operate	<b>Semiconductor Devices</b> Introduction of components and solid state devices	No amendments Content Reorganised to be completed within the time frames allocated
<b>Logics</b> Boolean Logic and basic Logic gates with their application	<b>Power Supplies</b> Principle of operation of linear power supplies, series and shunt using regulation	



# Summary: Amendments to the Content Overview for the Phase

GRADE 10	GRADE 11	GRADE 12
<p>TOOLS AND MEASURING INSTRUMENTS HAVE BEEN INFUSED ACROSS ALL TOPICS WITH A PRACTICAL COMPONENT</p> <p>THE RELEVANT TOOL/INSTRUMENT IS TAUGHT AND SKILLS HONED DURING THE PRACTICAL SESSIONS</p> <p><b>Power Sources</b>  <b>Content trimmed off:</b>  . The Electric Cell  <b>Primary cells vs. Secondary cells</b></p>	<p>TOOLS AND MEASURING INSTRUMENTS HAVE BEEN INFUSED ACROSS ALL TOPICS WITH A PRACTICAL COMPONENT</p> <p>THE RELEVANT TOOL/INSTRUMENT IS TAUGHT AND SKILLS HONED DURING THE PRACTICAL SESSIONS</p> <p><b>Power supplies removed</b></p>	<p>No Amendments. Content completed within the time frames allocated.</p>

# Summary: Amendments to the Content Overview for the Phase

GRADE 10	GRADE 11	GRADE 12
	<p>TOOLS AND MEASURING INSTRUMENTS HAVE BEEN INFUSED ACROSS ALL TOPICS WITH A PRACTICAL COMPONENT</p> <p>THE RELEVANT TOOLS/INSTRUMENT IS TAUGHT AND SKILLS HONED DURING THE PRACTICAL SESSIONS</p>	<p>Content reorganised to be completed within the time frames allocated.</p>

# Summary: Content/Topics Amended

GRADE10	Amendment
Tools and Measuring Instruments	Week 2-5 reorganised
Power Sources	Trimmed Week 1:2 subtopics trimmed off Week 3 removed
Logics	Removed

# Summary: Content/Topics Amended

GRADE10	Amendment
Communication Systems	Trimmed



# **2021 -2023 National Recovery Teaching Plan Grade 10**

## **4. Amendments School Based Assessment (SBA)**



# Summary: Amendment to the weighting of tasks

- **SBA Weighting of tasks:** Amended to the ratio of **60:40**
- **Abridged amended S13** aligned to the 2021 School Calendar



# Summary: Revised SBA of Grade 10 & Grades 10 and 11

Term 1	Term 2	Term 3	Term 4
Assignment:50 marks	Term Test:50 marks	Term Test:50 marks	Final Exam:200 marks

## Summary: Revised SBA Grade 12

Term 1	Term 2	Term 3	Term 4
Assignment:50 Marks	Practical Simulation:200 marks	Trial Exam:200 marks	Final Exam:200 marks

# Summary: Revision Final Examination Structure



# Final Examination Structure

- The total mark allocation still remain the same ie 200 marks
- There is one change that has been made on the final structure of the examination:
- A multiple choice question worth 15 marks has been included in the question paper.
- The questions will be from all the topics in the Grade as per the weightings of the topics in the amended/Abbridged Section 4 of the CAPS document.



# Summary: Revision Final Examination

## Structure Grade 10

Topic	Grade 10 (Revised)	
	Percentage	Marks +/- 4
Multiple Choice	7.5%	15
Occupational Health and Safety	5%	10
Tools and measuring instruments	12.5%	25
Basic Principles of Electricity	20%	40
Power Sources	12.5	25
Electronic Components	15%	30
Communication Systems	15%	30
Principles of Magnetism	12.5%	25
<b>Total</b>	100%	200 Marks



# Summary: Revision Final Examination

## Structure Grade 11

Topic	Grade 11 (Revised)	
	Percentage	Marks +/- 4
Multiple Choice	7.5%	15
Occupational Health and Safety	5%	10
Tools and measuring instruments	5%	10
Amplifiers	15%	30
Waveforms	15%	30
RLC	15%	30
Semiconductor Devices	20%	40
Power Supplies	5%	10
Sensors and Transducers	7.5%	15
Communication Systems	5%	10
Total	100%	200 Marks

# Summary: Revision Prep Examination

## Structure Grade 12

Topic		
	Percentage	Marks +/- 4
Multiple Choice	7.5%	15
Occupational Health and Safety	5%	10
RLC	17.5%	35
Semiconductor Devices	22.5%	45
Switching Circuits	25%	50
Amplifiers	22.5%	45
Total	100%	200 Marks

# Power Systems



# Summary: Amendments to the Content Overview for the Phase

Grade 10	Grade 11	Grade 12
<b>Occupational Health and Safety</b> Responsibilities, Workshop Rules & Procedures	<b>Occupational Health and Safety</b> Introducing the OHS Act, Machinery Regulations and Electrical Machinery Regulations	No amendments Content Reorganised to be completed within the time frames allocated
<b>Tools and measuring instruments</b> Tools and how to use them	<b>Tools and measuring instruments</b> Measuring instruments and how to use them	



# Summary: Amendments to the Content Overview for the Phase

Grade 10	Grade 11	Grade 12
<b>Basic Principles of Electricity</b> Introduction of electricity as the core of the subject	<b>Waveforms</b> Introduction of waveforms, pulse technique and wave shaping as an approach to electronics	No amendments Content reorganised to be completed within the time frames allocated
<b>Power Sources</b> Basic power sources such as the battery and how they operate	<b>RLC</b> The effect of AC on Series RLC Circuit	



# Summary: Amendments to the Content Overview for the Phase

Grade 10	Grade 11	Grade 12
	<b>DC Machines</b> Introducing of DC machines, their construction and operating principles	<b>No amendments. Content reorganised to be completed within the time frames allocated.</b>
	<b>Single Phase AC Generation</b> How electricity is generated	



# Summary: Amendments to the Content Overview for the Phase

Grade 10	Grade 11	Grade 12
<b>Electronic Components</b> Basic electronic components and how they operate	<b>Single-phase Transformers</b> Induction, the operation of transformers and types of transformers	No Amendments. content completed within the time frames allocated
<b>Domestic Installations</b>	<b>Control Devices</b> Motor Control and Programmable Logic Control	



# Summary: Amendments to the Content Overview for the Phase

Grade 10	Grade 11	Grade 12
	<b>Single Phase Motors</b> The Universal Motor, spit phase motor and their application	<b>No ammendments.</b> <b>Content reorganised to be completed within the time frames allocated.</b>
	<b>Power Supplies</b> DC Power supplies, Semiconductors, the Zener Diode, rectification and regulating voltage using a transistor	



# Summary: Revised SBA of Grade 10 & Grades 10 and 11

Term 1	Term 2	Term 3	Term 4
Assignment:50 marks	Term Test:50 marks	Term Test:50 marks	Final Exam:200 marks

## Summary: Revised SBA Grade 12

Term 1	Term 2	Term 3	Term 4
Assignment:50 Marks	Practical Simulation:200 marks	Trial Exam:200 marks	Final Exam:200 marks

# Summary: Amendments to the Content Overview for the Phase

GRADE 10	GRADE 11	GRADE 12
<p>TOOLS AND MEASURING INSTRUMENTS HAVE BEEN INFUSED ACROSS ALL TOPICS WITH A PRACTICAL COMPONENT</p> <p>THE RELEVANT TOOL/INSTRUMENT IS TAUGHT AND SKILLS HONED DURING THE PRACTICAL SESSIONS</p> <p><b>Power Sources</b>  <b>Content trimmed off:</b>  . The Electric Cell  <b>Primary cells vs. Secondary cells</b></p>	<p>TOOLS AND MEASURING INSTRUMENTS HAVE BEEN INFUSED ACROSS ALL TOPICS WITH A PRACTICAL COMPONENT</p> <p>THE RELEVANT TOOL/INSTRUMENT IS TAUGHT AND SKILLS HONED DURING THE PRACTICAL SESSIONS</p>	<p>CONTENT REORGANISED TO BE COMPLETED WITHIN THE TIME FRAMES ALLOCATED.</p>

# Summary: Amendments to the Content Overview for the Phase

GRADE 10	GRADE 11	GRADE 12
	<p>TOOLS AND MEASURING INSTRUMENTS HAVE BEEN INFUSED ACROSS ALL TOPICS WITH A PRACTICAL COMPONENT</p> <p>THE RELEVANT TOOLS/INSTRUMENT IS TAUGHT AND SKILLS HONED DURING THE PRACTICAL SESSIONS</p>	<p>CONTENT REORGANISED TO BE COMPLETED WITHIN THE TIME FRAMES ALLOCATED.</p>



# Summary: Content/Topics Amended

GRADE10	Amendment
Tools and Measuring Instruments	Week 2-5 reorganised
Power Sources	Trimmed Week 1:2 subtopics trimmed off Week 3 removed



# Summary: Content/Topics Amended

GRADE11	Amendment
Grade 11	CONTENT REORGANISED TO BE COMPLETED WITHIN THE TIME FRAMES ALLOCATED.



## **4. Amendments School Based Assessment (SBA)**

# Summary: Amendment to the weighting of tasks

- **SBA Weighting of tasks:** Amended to the ratio of **60:40**
- **Abridged amended S13** aligned to the 2021 School Calendar



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## Summary: Revised SBA Grade 12

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# Summary: Revision Final Examination Structure



# Final Examination Structure

- The total mark allocation still remain the same ie 200 marks
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# Summary: Revision Final Examination

## Structure Grade 10

Topic	Grade 10 (Revised)	
	Percentage	Marks +/- 4
Multiple Choice	7.5%	15
Occupational Health and Safety	5%	10
Tools and measuring instruments	12,5%	25
Basic Principles of Electricity	20%	40
Power Sources	12.5%	25
Electronic Components	15%	30
Domestic Installations	15%	30
Principles of Magnetism	12.5%	25
<b>Total</b>	<b>100%</b>	<b>200</b>



# Summary: Revision Final Examination

## Structure Grade 11

	Grade 11 (Revised)	
	Percentage	Marks +/- 4
Multiple Choice	7.5%	15
Occupational Health and Safety	5%	10
Tools and measuring instruments	5%	10
DC Machines	12.5%	25
Single Phase AC Generations	12.5%	25
Single Phase Transformers	10%	20
RLC	15%	30
Control Devices	12.5%	25
Single Phase Motors	12.5%	25
Power Suppliers	7.5%	15
Total	100%	200 Marks

# Summary: Revision Prep Examination

## Structure Grade 12

Topic	Grade 12 Prep (Revised)	
	Percentage	Marks +/- 4
Multiple Choice	7.5%	15
Occupational Health and Safety	5%	10
RLC	17.5%	35
Three Phase Generation	17.5%	35
Three Phase Transformers	15%	30
Motors and controls	17.5%	35
Programmable Logic Controllers	20%	40
Total	100%	200 Marks

# Conclusion

## SBA

- A uniform, standardised approach is used across Grade 10-12 in Electrical Technology: Digital Electronics, Electronics and Power Systems .
- No important aspect of the Grade 10 Electrical Technology curriculum is compromised.
- The foundational principles of the National Curriculum Statement (NCS) as stated for Electrical Technology: Digital Electronics, Electronics and Power Systems .
- are included.
- The Recovery ATP exposes learners to a variety of forms of assessment.
- The amended **School Based Assessment** (SBA) aligns to the content and time available.
- **Informal assessment** focuses on the principles of assessment for learning.
- Informal activities are compulsory in preparation of the formal assessment.

## PAT

- The amendment for the Gr 10 -11PAT aligns to the Revised S13 of CAPS.
- **Adhere to all Covid Safety regulations**

# Contact Details

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&

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A photograph of a wooden surface with a cream-colored card and a black pen. The card is tilted and has the words "Thank You" written on it in a large, bold, black serif font. A black pen with gold-colored accents is lying diagonally across the right side of the card.

**Thank  
You**

