



PROVINCE OF THE
EASTERN CAPE
EDUCATION

DIRECTORATE:
CURRICULUM FET PROGRAMMES
ELECTRICAL TECHNOLOGY
GRADE 12
LESSON PLANS
TERM 4

FOREWORD

The following Grade 12 Lesson Plans were developed by Subject Advisors during August 2009. Teachers are requested to look at them, modify them where necessary to suit their contexts and resources. It must be remembered that Lesson Plans are working documents, and any comments to improve the lesson plans in this document will be appreciated. Teachers are urged to use this document with the following departmental policy documents: Subject Statement; LPG 2008; SAG 2008; Examination Guidelines 2009 and Provincial CASS Policy / Guidelines.

Lesson planning is the duty of each and every individual teacher but it helps when teachers sometimes plan together as a group. This interaction not only helps teachers to understand how to apply the Learning Outcomes (LOs) and Assessment Standards (ASs) but also builds up the confidence of the teachers in handling the content using new teaching strategies.

It must please be noted that in order to help teachers who teach across grades and subjects, an attempt has been made to **standardise lesson plan templates** and thus the new template might not resemble the templates used in each subject during the NCS training. However, all the essential elements of a lesson plan have been retained. This change has been made to assist teachers and lighten their administrative load.

Please note that these lesson plans are to be used only as a guide to complete the requirements of the Curriculum Statements and the work schedules and teachers are encouraged to develop their own learner activities to supplement and /or substitute some of the activities given here (depending on the school environment, number and type of learners in your class, the resources available to your learners, etc).

Do not forget to build in the tasks for the Programme of Assessment into your Lesson Plans.

Strengthen your efforts by supporting each other in clusters and share ideas. Good Luck with your endeavours to improve Teaching, Learning and Assessment.

SUBJECT: ELECTRICAL TECHNOLOGY		GRADE: 12		LESSON PLAN 1		TERM 4		TIME: 4 HRS			
CORE CONTENT: Electrical and Mechanical faults on three-phase equipment											
INTEGRATION: Engineering subjects, Physical Science, Mathematics and CAT/IT											
LEARNING OUTCOME 1:			LEARNING OUTCOME 2:			LEARNING OUTCOME 3:			LEARNING OUTCOME 4:		
TECHNOLOGY SOCIETY AND THE ENVIRONMENT			TECHNOLOGICAL PROCESS			KNOWLEDGE AND UNDERSTANDING			APPLICATION OF KNOWLEDGE		
12.1.1 Predict the impact of future developments in technology on society and environment.			12.2.1 Identify, investigate, define and analyse problems in a given real-life situation.			12.3.1 Apply the Occupational Health and Safety (OHS) Act and regulations where applicable	X		12.4.1 Safety and instruments Identify unsafe conditions and acts and apply tools and instruments correctly.		X
12.1.2 Respect human rights and analyse issues relating to employment equity.			12.2.2 Generate and/or design possible solutions for problems.						12.4.2 Electrical applications Construct and analyse single-phase and three phase circuits.		X
12.1.3 Describe, explain and respond to medical emergencies in context, taking cognisance of health issues such as HIV/Aids.			12.2.3 Make or improve products according to the selected design.			12.3.3 Explain three-phase AC generation.			12.4.3 Electronics Construct and analyse electronic circuits		
12.1.4 Analyse how solutions to technological problems in different cultures are combined into an optimum solution			12.2.4 Evaluate the product against the initial design.			12.3.4 Determine the effect of AC on series and parallel resistor, inductor and capacitor component combination circuits.			12.4.4 Digital electronics Construct and analyse programmable control circuits.		
12.1.5 Identify and investigate possible entrepreneurial opportunities.			12.2.5 Present assignments by means of a variety of communication media.								
						12.3.6 Explain the operating principles of switching and control circuits.					
						12.3.7 Analyse the output of amplifiers, taking characteristics and feedback into account.					
						12.3.8 Explain the operation and use of three-phase transformers.					
						12.3.10 Combine logic concepts as an introduction to programmable control.					
						12.3.12					

			Explain the operating principles and application of three-phase motors and control.		
TEACHING ACTIVITIES		LEARNERS ACTIVITIES		RESOURCES	
Test, analyse and describe electrical and mechanical faults on three-phase equipment		Practical/worksheets		Heavy current lab	
Homework:				Completed worksheet	
Enrichment/Expanded Opportunities:					
Teacher Reflections:					

SIGNATURES:

TEACHER

DATE

HOD / SMT

DATE

ELECTRICAL TECHNOLOGY PAT

TEACHING ACTIVITIES	LEARNERS ACTIVITIES	RESOURCES	ASSESSMENT	DATE COMPLETED
<p>Technological Process:</p> <p>Review/explain the Technological process:</p> <ol style="list-style-type: none"> 1. Identify, investigate, define and analyse problems in a given real-life situation. 2. Generate and/or design possible solutions for problems. 3. Make or improve products according to a selected design. 4. Evaluate a final product against the initial design. 5. Present assignments by means of a variety of communication media. <p>Teacher provides guidance in planning and execution of PAT topic</p>	<p>Learners apply the following principles</p> <ol style="list-style-type: none"> 1. Identify, investigate, define and analyse problems in a given real-life situation. 2. Generate and/or design possible solutions for problems. 3. Make or improve products according to a selected design. 4. Evaluate a final product against the initial design. 5. Present assignments by means of a variety of communication media. <p>and then</p> <ul style="list-style-type: none"> • Present the final solution with working/layout drawings • Present the final solution, or parts thereof, with a 3D pictorial drawing(s), and a model where necessary • Evaluate the whole process 	<p>Models, CAD software, Audio-visual media, Worksheets, Drawing instruments catalogues, internet.</p>	<p>Tools:</p> <ul style="list-style-type: none"> • Memo's • Task lists, • rubrics <p>Method:</p> <ul style="list-style-type: none"> • Teacher <p>Evidence:</p> <ul style="list-style-type: none"> • Task-based 	
<p>Cost Factors Guide learners in costing the PAT</p>	<p>Learners research and compile costing lists.</p>		<p>Presentation portfolio for performance evaluation</p>	
<p>Entrepreneurial opportunities</p>	<p>Research and present <i>Entrepreneurial Opportunities</i> for the scenario in a portfolio of evidence.</p>			
<p>Models (Shoebox Size)</p>	<p>Model the final solution.</p>			
<p>Homework:</p>				
<p>Enrichment/Expanded Opportunities:</p>				
<p>Teacher Reflections:</p>				



