



# Siyaya<sup>®</sup>

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**NATIONAL CERTIFICATE:**  
PRODUCTION TECHNOLOGY LEVEL 3  
(SAQA reg. 58781)

# NATIONAL CERTIFICATE: Production Technology Level 3: SAQA reg. 58781

## 1. PURPOSE

This Qualification provides learners with the range of learning and skills required to be able to perform a series of activities to support Manufacturing, Engineering and Technology processes. Learners will acquire a range of skills in the identification of production parameters in Manufacturing, Engineering and Technology Industries and basic strategies to achieve them.

**The Qualifying learner will be able to:**

- Perform production maintenance activities and report irregularities within organizational structures
- Apply the fundamental concepts, theories and techniques of production systems
- Apply the fundamental concepts relating to production planning, scheduling and control
- Apply quality control and quality assurance practices for efficient and effective production processes
- Communicate effectively as a member of a team

## 2. RATIONALE FOR THE LEARNING PROGRAM QUALIFICATION

As a result of an increased need for efficient and quality production processes in the Manufacturing, Engineering and Technology field, the demand for production technology competencies has become more evident.

This Qualification contributes to the industries in Manufacturing and related fields which will allow learners who achieve the Qualification to contribute and function in areas such as Production Planning and Control, Systems and Maintenance, Quality and Occupational Health and Safety. Learners who will typically embark on this Qualification are individuals who have an interest in a career in Production Technology. The Production Technology competencies incorporated in this Qualification can also be offered as support skills programs to incumbents in any other Manufacturing, Engineering and Technology field Qualifications.

## 3. QUALIFICATION RULES

All fundamental Units Standards to the value of 36 credits must be completed.

All core Unit Standards to the value of 51 credits must be completed.

Learners must complete Unit Standards to the value specialization, of at least 33 credits from the specialization, sector or general Elective Unit Standards.

## 4. LEARNER ACCESS

- Communication at NQF Level 2
- Mathematical literacy NQF Level 2
- Contribute to achieving production specifications through optimizing organizational structures, functions and processes NQF Level 2
  - Demonstrate an understanding of production technology practices, terminology and systems as applied in manufacturing, engineering and technology NQF Level 2
  - Contribute to efficient and effective production by applying quality standards and procedures NQF Level 2



# Description of the modules, learning objectives and their relationship to the Unit Standards

**Unit Standard:** Apply Quality Procedures (13234).

- Explain and discuss the quality assurance system and quality objectives, standards, elements
- Apply quality procedures and standards in work area
- Handle and care for instruments and gauges related to quality processes. Includes checking, cleaning, maintaining and storing
- Recognize and report on quality problems in work area

**Unit Standard:** Apply safety, health and environmental protection procedures (13223).

- Explain and discuss statutory rights, responsibilities and liability regarding safety
- Explain and discuss safety, health and environmental objectives, standards and regulations
- Perform safety and environmental inspections in work area
- Identify unsafe conditions and take corrective action
- Report on safety conditions in work area

**Unit Standard:** Describe and explain the principles of logistics support in a specific context (244504).

- Explain the role of logistics as they apply to a specific operation
- Understand supply chains and the movement of materials within supply chains
- Describe logistics activities in a specific operation
- Describe the concepts relating to inventory that are applicable to a specific operation

**Unit Standard:** Explain the planning and scheduling of tasks in a production environment (116218).

- Explain production planning and the different levels of planning that can be used in production planning activities
- Demonstrate an understanding of scheduling
- Demonstrate production optimization techniques
- Demonstrate the ability to make meaningful comments on the planning and scheduling process

**Unit Standards:** Identify and explain the core and support functions of an organization (242814).

- Explaining the various core functions of an organization
- Explaining the support functions of an organization
- Explaining the role of a selected work unit in an organization, in relation to the core business
- Investigating and explaining the difference between line and support functions in an organization

**Unit Standards:** Work as a project team member (120379).

- Demonstrating an understanding of the criteria for working as a member of a team
- Collaborating with other team members to improve performance
- Participating in building relations between team members and other stakeholders
- Respecting personal, ethical, religious and cultural differences to enhance interaction between team members
- Using a variety of strategies to deal with potential or actual conflict between team members

**Unit Standards:** Perform first line maintenance (9913).

- Observe equipment operation during normal operating cycle
- Perform routine first line maintenance
- Report on work done

**Unit Standards:** Communication (119472), (119466), (119457), (119467).

- Accommodate audience and context needs in oral/signed communication
- Interpret a variety of literary texts
- Interpret and use information from texts
- Use language and communication in occupational learning programs

# Description of the modules, learning objectives and their relationship to the Unit Standards *Cont.*

**Unit Standards:** Mathematical Literacy (9010), (9013), (9012), (7456).

- Demonstrate an understanding of the use of different number bases and measurement units and an awareness of error in the context of relevant calculations
- Use mathematics to investigate and monitor the financial aspects of personal, business and national issues
- Investigate life and work related problems using data and probabilities
- Describe, apply, analyze and calculate shape and motion in 2-and 3-dimensional space in different contexts

**Unit Standard:** Maintain stock levels of equipment and consumables (265001).

- Explaining stock control concepts in accordance with typical industry practices
- Maintaining appropriate stock levels
- Procuring stock for a given period or specific contract
- Count and evaluate materials stocked

**Unit Standard:** Perform basic First Aid (12483).

- Explain and discuss basic first aid concepts
- Determine the nature of the injury/medical emergency, the context of the injury and basic first aid
- Apply basic first aid
- Hand over the injured/fill person to medical personnel
- Complete first aid report

**Unit Standard:** Separate, handle, store, treat and transport waste (119555).

- Separate, treat and store waste
- Transport waste
- Control access and monitor the flow of incoming materials to a waste facility
- Recognize and report threats or damage to health, safety or the environment

**Unit Standard:** Apply basic road transport managerial principles (113840).

- Understanding an organization
- Applying policy and procedures to meet Vision, Mission and Objectives
- Applying and operationalizing strategy to make suggestions and recommendations
- Being part of a team and multiple teams
- Applying decisions at the general supervisory management level in the transport industry
- Working with customers, peers, subordinates and superiors within the organization
- Functioning in conjunction with multiple teams

**Unit Standard:** Demonstrate knowledge and understanding of HIV/AIDS in a workplace, and its effects on a business sub-sector, own organization and a specific workplace (13915).

- Understanding the effects of HIV/AIDS on the immune system
- Knowing how HIV/AIDS is transmitted
- Knowing what behavior is safe and what behavior carries the risk of HIV/AIDS transmission
- Knowing what guidelines and assistance are available to support workers with HIV/AIDS and recognize own role in creating a caring work environment
- Understanding the implications of the HIV/AIDS pandemic for society, the economy, a business sub-sector, an organization and a specific workplace

# Description of the modules, learning objectives and their relationship to the Unit Standards *Cont.*

**Unit Standard:** Handle and care for materials (9914).

- Check material requirements for production
- Plan and arrange transport of materials to work station
- Store materials
- Complete all required documentation
- Discuss and explain incidents and problems related to materials handling

**Unit Standard:** Manage work time effectively (9530).

- Demonstrate understanding of the concept “time management in a 24-hour day world”
- Describe the difference between urgent and important and prioritize daily activities
- Estimate time spent on a task and draw up a general day, week and month planner to manage time

**Unit Standard:** Operate within a logistics environment (113829).

- Defining a logistics system, the management thereof, as well the logistical activities required
- Operating within a logistical distribution channel
- Operating within a physical distribution environment
- Operating within a store or warehouse environment
- Operating within an order-processing environment

**Unit Standard:** Perform the role of a safety, health and environmental protection representative (12455).

- Explain and discuss the role and responsibilities of a safety, health and environmental protection
- Investigate and inspect safety, health and environmental protection issues in the workplace
- Consult employees about safety, health and environmental protection issues in the workplace
- Represent employees in safety, health and environmental protection structures and processes
- Coach employees on safety, health and environmental protection issues

**Unit Standard:** Prepare, set up and operate process equipment in a production environment (259697).

- Plan the set-up process production equipment
- Prepare and set-up equipment
- Operate equipment
- Perform post-operation activities

**Unit Standard:** Show understanding of diversity in the workplace (116720).

- Demonstrate an understanding of cultural and other differences in the workplace
- List and understand the concept stereotypes in the workplace
- Demonstrate a basic understanding of the role of change in the workplace

**Unit Standard:** Demonstrate understanding of warehouse manufacturing and inventory assembly (116280).

- Receive material and transact receipt
- Route received material to designated storage area and store/warehouse
- Pick and supply material
- Audit inventory accuracy
- Apply reverse logistics

Description of assessment of competencies per learning outcome (per module)				
CORE/ FUNDAMENTAL/ ELECTIVE	US	PRE-2009 NQF LEVEL	NQF LEVEL	CREDITS
Core	13234	Apply quality procedures	Level 3	8
Core	13223	Apply safety, health and environmental protection procedures	Level 3	6
Core	244504	Describe and explain the principles of logistics support in a specific context	Level 3	6
Core	116218	Explain the planning and scheduling of tasks in a production environment	Level 3	3
Core	242814	Identify and explain the core and support functions of an organization	Level 3	6
Core	9913	Perform first line maintenance	Level 3	14
Core	120379	Work as a project team member	Level 4	8
Fundamental	119472	Accommodate audience and context needs in oral/ signed communication	Level 3	5
Fundamental	9010	Demonstrate an understanding of the use of different number bases and measurement units and an awareness of error in the context of relevant calculations	Level 3	2
Fundamental	9013	Describe, apply, analyze and calculate shape and motion in 2-and 3-dimensional space in different contexts	Level 3	4
Fundamental	119466	Interpret a variety of literary texts	Level 3	5
Fundamental	119457	Interpret and use information from texts	Level 3	5
Fundamental	9012	Investigate life and work related problems using data and probabilities	Level 3	5
Fundamental	119467	Use language and communication in occupational learning programs	Level 3	5
Fundamental	7456	Use mathematics to investigate and monitor the financial aspects of personal, business and national issues	Level 3	5
Elective	265001	Maintain stock levels of equipment and consumables	Level 2	4
Elective	12483	Perform basic first aid	Level 2	4
Elective	119555	Separate, handle, store, treat and transport waste	Level 2	9
Elective	113840	Apply basic road transport managerial principles	Level 3	11
Elective	13915	Demonstrate knowledge and understanding of HIV/AIDS in a workplace, and its effects on a business sub-sector, own organization and a specific workplace	Level 3	4
Elective	9914	Handle and care for materials	Level 3	12
Elective	9530	Manage work time effectively	Level 3	3



CORE/ FUNDAMENTAL/ ELECTIVE	US	PRE-2009 NQF LEVEL	NQF LEVEL	CREDITS
Elective	113829	Operate within a logistics environment	Level 3	10
Elective	12455	Perform the role of a safety, health and environmental protection representative	Level 3	4
Elective	259697	Prepare, set up and operate process equipment in a production environment	Level 3	36
Elective	116720	Show understanding of diversity in the workplace	Level 3	3
Elective	116280	Demonstrate understanding of warehouse manufacturing and inventory assembly	Level 4	20



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