

NATIONAL CERTIFICATE:

PRODUCTION TECHNOLOGY
NQF LEVEL 4 SAQA 58779



merSETA
MANUFACTURING, ENGINEERING
AND RELATED SERVICES SETA

EHI HAS BEEN ACCREDITED BY:
MERSETA ACCREDITATION No:
17-QA/ACC/0603/11
B-BBEE LEVEL 2 CONTRIBUTOR & VALUE ADDING SUPPLIER

NATIONAL CERTIFICATE:

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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:

- Measure, control and improve factors influencing productivity.
- Contribute to budgeting processes in an operational unit to optimise resources.
- Solve operational problems in a production process.
- Promote, implement and maintain procedures that support quality assurance and control.

This qualification is the third qualification in a pathway of three (3) qualifications for learners in the production technology environment.

Rationale

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, Optimisation, Systems and Maintenance, Logistics, 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 programmes to incumbents in any other Manufacturing, Engineering and Technology Field Qualifications.

Qualification Rules

The Qualification consists of a Fundamental, a Core and an Elective Component.

To be awarded the Qualification, learners are required to obtain a minimum of 143 credits as detailed below.

Fundamental Component:

The Fundamental Component consists of Unit Standards in:

- Mathematical Literacy at NQF Level 4 to the value of 16 credits.
- Communication at NQF Level 4 in a First South African Language to the value of 20 credits.
- Communication in a Second South African Language at NQF Level 3 to the value of 20 credits.

It is compulsory therefore for learners to do Communication in two different South African languages, one at Level 4 and the other at Level 3. All Unit Standards in the Fundamental Component are compulsory.

Core Component:

The Core Component consists of Unit Standards to the value of 67 credits all of which are compulsory.

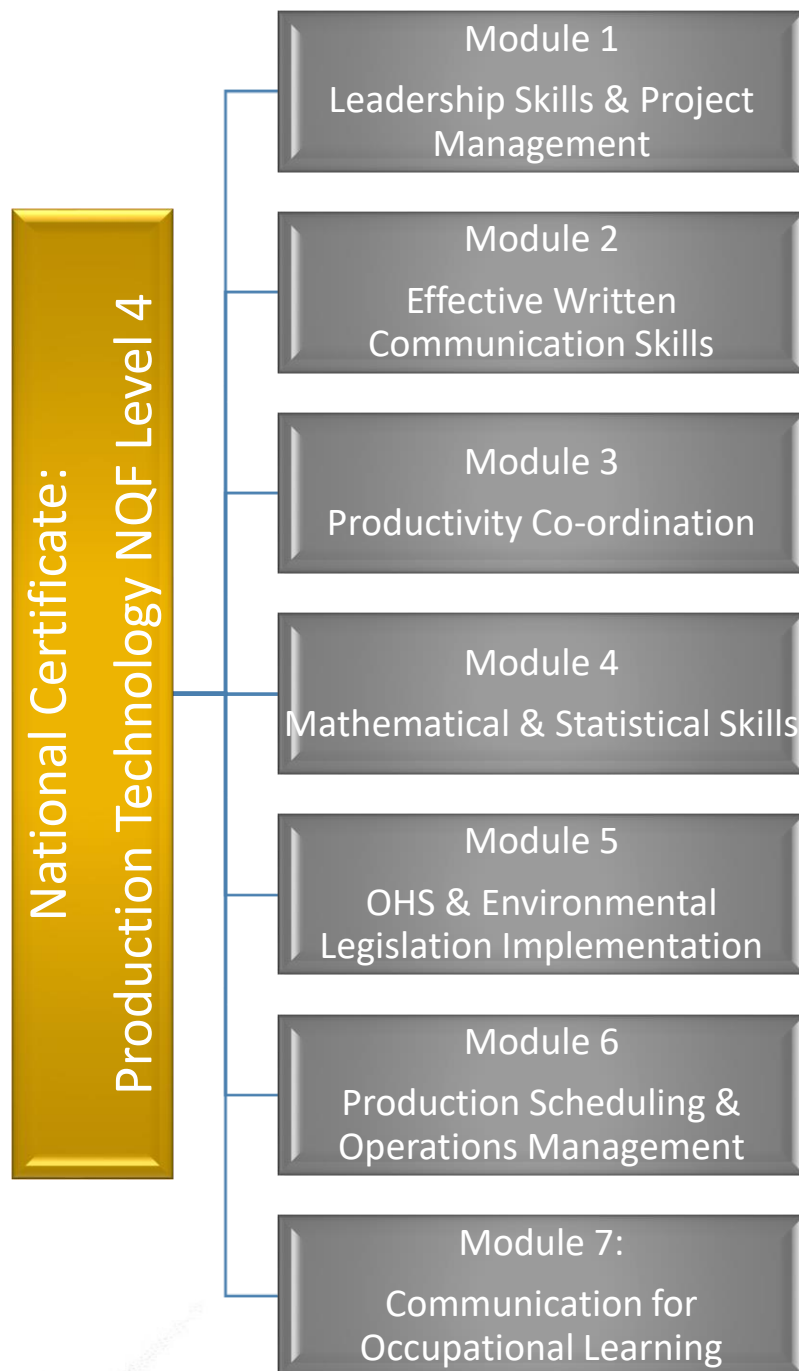
Elective Component:

The Elective Component consists of Unit Standards to the value of 343 credits. Learners are to choose Unit Standards to the minimum of 20 credits.

Learner Access

- Communication at NQF Level 3.
- Mathematical literacy NQF Level 3.
- Apply the fundamental concepts, theories and techniques of production systems, NQF Level 3.
- Apply the fundamental concepts relating to production planning, scheduling and control, NQF Level 3.
- Apply quality control and quality assurance practices for efficient and effective production processes, NQF Level 3.

Programme Modules



Programme Duration

Recommended 34 days.

Exit Level Outcomes & Associated Assessment Criteria

Associated Assessment Criteria for Exit Level Outcome 1: Measure, control and improve factors influencing production.

Range: Factors include not limited to MRP, Just in Time (JIT), logistics, supply chains, value chains, labour, materials, capacity planning, maintenance, scheduling and planning, ergonomics, capability studies, work study techniques, statistical process control, reliability studies.

- Factors affecting production are identified and their influence explained in order to improve productivity.
- Appropriate techniques for process measurement and improvement are identified and applied to contribute to process improvement.
- Process control standards are monitored and adjustments are made to the process in order to meet production targets.
- Process improvement interventions are evaluated for sustainability.
- Opportunities for continuous improvement are identified and strategies for implementation are formulated.

Associated Assessment Criteria for Exit Level Outcome 2: Contribute to budgeting processes in an operational unit to optimise resources.

- Opportunities for reducing the cost factors in a production process are identified to minimise operational costs.
- Resource requirements are communicated for inclusion in budget estimations.
- Expenditure is analysed in terms of budgeted costs to inform operational cost control actions.
- The importance of cost control is explained and demonstrated to ensure budget adherence.

Associated Assessment Criteria for Exit Level Outcome 3: Solve operational problems in a production process.

- Operational problems are identified and analysed to determine root causes.
- Possible solutions are generated and evaluated using problem solving techniques.
- Alternatives evaluated and appropriate remedy implemented to overcome identified problem area.
- Verbal and non-verbal communication skills are used effectively in the workplace.
- A range of communication strategies are identified and utilised to solve manufacturing related problems.
- Conditions, evidence and incidences are reported accurately in a timely manner and discussed with peers and management.
- Solutions are monitored over time to ensure their effectiveness.

Associated Assessment Criteria for Exit Level Outcome 4: Promote, implement and maintain procedures that support quality assurance and control.

- Quality costs are identified and explained to understand the economics of quality.
- Explore the concept of an environmental quality system as it relates to a workplace, and conduct a basic analysis.
- Deviations and non-conformances are investigated and reported on to avoid recurrences.
- Quality control techniques are explored and introduced to a workplace to minimise defects and wastage.

**Qualification Breakdown: NQF Level 4: National Certificate: Production Technology
SAQA 58779 (148 Credits) / Duration: 12 Months**

Type	ID	Unit Standard Title	NQF	Credits	Days
Module 1: Leadership Skills and Project Management (Total 14 credits)					
Core	13952	Demonstrate basic understanding of the Primary Labour Legislation that impacts on a business unit	4	8	2
Core	120375	Participate in the estimation and preparation of cost budget for a project or sub project and monitor and control actual cost against budget	4	6	2
Module 2: Effective Written Communication Skills (Total 20 credits)					
Fundamental	119457	Interpret and use information from texts	3	5	1
Fundamental	119465	Write/present/sign texts for a range of communication contexts	3	5	1
Fundamental	119459	Write/present/sign for a wide range of contexts	4	5	1
Fundamental	119469	Read/review/sign and respond to a variety of texts	4	5	1
Module 3: Productivity Co-ordination (Total 24 credits)					
Core	14586	Monitor and control quality control practices in a manufacturing/engineering environment	4	8	2
Core	114877	Formulate and implement an action plan to improve productivity within an organisational unit	4	8	2
Core	114884	Co-ordinate the improvement of productivity within a functional unit	4	8	2
Module 4: Mathematical & Statistical Skills (Total 16 credits)					
Fundamental	7468	Use mathematics to investigate and monitor the financial aspects of personal, business, national and international issues	6	4	1
Fundamental	9015	Apply knowledge of statistics and probability to critically interrogate and effectively communicate findings on life related problems	6	4	1
Fundamental	9016	Represent analyse and calculate shape and motion in 2-and 3-dimensional space in different contexts	4	4	1
Module 5: OHS & Environmental Legislation Implementation (Total 25 credits)					
Elective	123369	Implement environmental improvements to a site, facility, operation or process	4	16	4
Elective	120366	Demonstrate understanding of the implementation of occupational health, safety and environmental legislation in the work place	4	9	2
Module 6: Production Scheduling & Operations Management (Total 29 credits)					
Core	243025	Monitor machining process, interpret statistical process control charts, and rectify production problems	3	7	2
Core	116284	Solve operational problems in a manufacturing / assembly context	4	10	2
Core	116287	Schedule and monitor production	4	12	3
Module 7: Communication for Occupational Learning (Total 20 credits)					
Fundamental	119472	Interpret and use information from texts	3	5	1
Fundamental	119471	Write/present/sign texts for a range of communicative contexts	4	5	1
Fundamental	119467	Write/present/sign for a wide range of contexts	3	5	1
Fundamental	119462	Read/view, analyse and respond to a variety of texts	4	5	1
Total Credits = 148 Total Training Days = 34					