



Accredited Provider  
The Skills College for Development and Training (Pty)Ltd.

## **National Certificate: Metal and Engineering Manufacturing Processes**

*Qualification ID 79686 – NQF 2; 120 Credits*

### **INTRODUCTION**

Purpose:

This Qualification is for any individual who is, or wishes to be, involved in a metal and engineering manufacturing processes environment. The purpose of the qualification is to provide learners, with the standards and the range of learning required to achieve competence in the operation and monitoring of machines in the metal and engineering manufacturing processes industry. This qualification recognises the skills, knowledge and values acquired by learners involved in operating and monitoring manufacturing machinery and assembling components and working in the metal and engineering industry using such processes.

The other related and important skills that are recognised in this qualification are reading and interpreting engineering drawings and marking off regular engineering shapes and the use of engineering hand and power tools. This capability requires an understanding of basic quality requirements and monitoring material flow.

The Qualification contains all the skills, knowledge, values and attitudes required by a learner who will be working at an entry level in a specific metal and engineering manufacturing processing environment. An individual acquiring this Qualification will be able to contribute to the efficient operation of a number of processes within this sector.

The main competencies in this qualification are:

Operating and monitoring machinery.

Completing post-production and finishing operations.

Reading and interpreting engineering drawings.

Marking-off regular engineering shapes.

Selecting, using and caring for engineering hand and power tools.

Verifying compliance to safety, health and environmental requirements in the workplace.

Explaining emergency preparedness and response procedures.

Working in a team.

These competencies will enable the learner to work in different industries within the diverse metal and engineering manufacturing processes sector.

Although this qualification is located within the manufacturing environment, it can be used in the production environment in so far as the competencies in the Core component apply to that environment.

The Qualification ensures progression of learning, enabling the learner to perform optimally at an entry level within the metal and engineering manufacturing processes field and providing access to a higher Qualification within the same or a related sector. The Qualification will facilitate access to, and mobility within, education and training for learners who:

Would like to achieve this Qualification through the process of Recognition of Prior Learning (RPL) and/or formal study.

Wish to extend their range of skills and knowledge and hence their competencies in the metal and engineering manufacturing processes environment.

The Qualification also hopes to:

Release the potential of people.

Provide opportunities for people to explore related activities within the metal and engineering manufacturing processes sector.

### **Rationale:**

This is the first Qualification in a series of three metal and engineering manufacturing processes qualifications that range from NQF Level 2 to 4. These qualifications constitute a learning pathway that takes the learners from basic/simple competencies in metal and engineering manufacturing processes at NQF Level 2 to fairly substantial metal and engineering manufacturing processes competencies at NQF Level 4. This first qualification provides access for learners who want to follow a career in the metal and engineering industry. This qualification reflects the skills, knowledge and understanding required to participate effectively in the metal and engineering processes industry, whether in micro, small, medium or large operations.

The metal and engineering manufacturing processes industry is characterised by diverse manufacturing processes operating in a competitive and challenging environment. The manufactured products have to respond to a wide variety of exacting customer and consumer requirements. The highly developed metal and engineering manufacturing processes sector is well-established. It will be in the interest of the country and the sector to ensure that sector has high levels of productivity and efficiency. This qualification can assist the sector to obtain those goals.

This Qualification forms the basis for further learning in the field of metal and engineering manufacturing processes at NQF Level 3 and 4. The Qualification and its related Unit Standards were developed to standardise the accreditation of learning programmes, resulting in improved quality management in terms of programme delivery.

The National Certificate: Metal and Engineering Manufacturing Processes, NQF Level 2 supports the objectives of the NQF in that it gives the learner access to a registered Qualification. It will ensure that the quality of education and training in the sub-field is enhanced and of a world-class standard. The Qualification will allow learners not only to develop their knowledge and skills in the metal and engineering manufacturing processes sector, but will also enable them to benchmark their competencies against international standards..

### **Recognition of prior learning:**

This Qualification may be achieved in part (or whole) through the recognition of relevant prior knowledge and/or experience. The learner must be able to demonstrate competence in the knowledge, skills, values and attitudes implicit in this Qualification. As part of the provision of Recognition of Prior Learning providers are required to develop a structured means for the assessment of individual learners against the Unit Standards of the Qualification on a case-by-case basis. A range of assessment tools and techniques used during formative and summative assessment should also be used for Recognition of Prior Learning. Whatever assessment is used for Recognition of Prior Learning it should be jointly decided upon by the learner and the assessor. Such procedures, and the assessment of individual cases, are subject to moderation by independent assessors. The same principles that apply to assessment of this Qualification also apply to Recognition of Prior Learning.

Learners may provide evidence of prior learning for which they may receive credit towards the Unit Standards and/or the Qualification as agreed to between the relevant provider and relevant ETQA or ETQA that has a Memorandum of Understanding in place with the relevant ETQA.

Access to the Qualification:

There is an open access to this Qualification, keeping in mind the "Learning Assumed to be in Place".

### EXIT LEVEL OUTCOMES

Qualifying learners will be able to:

1. Operate and monitor machinery in the metal and engineering related environment.

Range:

These competencies can be used within manufacturing, production and assembly environments.

2. Assemble components/products in a manufacturing or production environment.

3. Explain the use of engineering drawings and marking-off procedures for regular engineering shapes.

4. Demonstrate an understanding of Occupational Health, Safety and Environmental standards in the workplace.

Critical Cross-Field Outcomes:

### TIME PERIOD

This Learnership can be presented over a period of 12 months.

### A SELECTION OF THE FOLLOWING UNIT STANDARDS WILL BE COMPLETED THAT IS CONSTITUENT TO 120 CREDITS:

#### UNIT STANDARDS:

|      | ID                     | UNIT STANDARD TITLE                                    | PRE-2009 NQF LEVEL | NQF LEVEL    | CREDITS |
|------|------------------------|--|--------------------|--------------|---------|
| Core | <a href="#">265003</a> | Assemble components                                    | Level 2            | NQF Level 02 | 12      |
| Core | <a href="#">265000</a> | Complete post-production and finishing operations      | Level 2            | NQF Level 02 | 6       |
| Core | <a href="#">259597</a> | Explain emergency preparedness and response procedures | Level 2            | NQF Level 02 | 3       |
| Core | <a href="#">335897</a> | Mark off regular engineering shapes                    | Level 2            | NQF Level 02 | 6       |
| Core | <a href="#">9876</a>   | Operate and monitor machinery                          | Level 2            | NQF Level 02 | 12      |
| Core | <a href="#">335860</a> | Read and interpret engineering drawings                | Level 2            | NQF Level 02 | 8       |
| Core | <a href="#">119744</a> | Select, use and care for engineering hand tools        | Level 2            | NQF Level 02 | 8       |

|             |                        |   |         |              |   |
|-------------|------------------------|---|---------|--------------|---|
| Core        | <a href="#">12219</a>  | Select, use and care for engineering power tools  | Level 2 | NQF Level 02 | 6 |
| Core        | <a href="#">259604</a> | Verify compliance to safety, health and environmental requirements in the workplace   | Level 2 | NQF Level 02 | 4 |
| Core        | <a href="#">9322</a>   | Work in a team  | Level 2 | NQF Level 02 | 3 |
| Fundamental | <a href="#">119463</a> | Access and use information from texts   | Level 2 | NQF Level 02 | 5 |
| Fundamental | <a href="#">9009</a>   | Apply basic knowledge of statistics and probability to influence the use of data and procedures in order to investigate life related problems | Level 2 | NQF Level 02 | 3 |
| Fundamental | <a href="#">7480</a>   | Demonstrate understanding of rational and irrational numbers and number systems   | Level 2 | NQF Level 02 | 3 |
| Fundamental | <a href="#">9008</a>   | Identify, describe, compare, classify, explore shape and motion in 2-and 3-dimensional shapes in different contexts                           | Level 2 | NQF Level 02 | 3 |
| Fundamental | <a href="#">119454</a> | Maintain and adapt oral/signed communication  | Level 2 | NQF Level 02 | 5 |
| Fundamental | <a href="#">119460</a> | Use language and communication in occupational learning programmes  | Level 2 | NQF Level 02 | 5 |
| Fundamental | <a href="#">7469</a>   | Use mathematics to investigate and monitor the financial aspects of personal and community life   | Level 2 | NQF Level 02 | 2 |
| Fundamental | <a href="#">9007</a>   | Work with a range of patterns and functions and solve problems  | Level 2 | NQF Level 02 | 5 |
| Fundamental | <a href="#">119456</a> | Write/present for a defined context   | Level 2 | NQF Level 02 | 5 |
| Elective    | <a href="#">252250</a> | Apply fire fighting techniques  | Level 1 | NQF Level 01 | 3 |
| Elective    | <a href="#">119567</a> | Perform basic life support and first aid procedures   | Level 1 | NQF Level 01 | 5 |
| Elective    | <a href="#">243067</a> | Cut materials using the oxy-fuel gas cutting process (manual cutting)   | Level 2 | NQF Level 02 | 6 |
| Elective    | <a href="#">12466</a>  | Explain the individual`s role within business   | Level 2 | NQF Level 02 | 4 |
| Elective    | <a href="#">244365</a> | Lift and move material and equipment by means of a forklift   | Level 2 | NQF Level 02 | 3 |
| Elective    | <a href="#">242976</a> | Operate overhead/gantry cranes  | Level 2 | NQF Level 02 | 5 |
| Elective    | <a href="#">119753</a> | Perform basic welding/joining of metals   | Level 2 | NQF Level 02 | 8 |
| Elective    | <a href="#">335896</a> | Prepare surfaces  | Level 2 | NQF Level 02 | 6 |