TRAINING FORCE
Linking Training to Industry

ENGINEERING

NATIONAL CERTIFICATE: WELDING APPLICATION & PRACTICE

COURSE INFORMATION

SAQA ID: 57881 (LP: 58534)
NQF Level: 2
Learnership Duration: 12 months
Credits: 158 Minimum
Contact Sessions: Minimum Contact Session, including remediation (if required)and Portfolio Building, for this Qualification is **34 Days**
Accrediting SETA: Manufacturing, Engineering and Related Services Sector Education & Training Authority

PURPOSE

The purpose of this qualification is to provide learners with the standards and the range of learning required to work effectively in the welding industry and to meet the challenges of such an environment.

ENTRY CRITERIA

- Communication at NQF Level 1.
- Mathematical Literacy at NQF Level 1.

QUALIFICATION RULES

The qualifying learner will achieve this qualification by complying with the following rules of combination for the accumulation of credits totalling a minimum of 158:

- Core unit standards totalling 106 credits are compulsory.
- Fundamental unit standards totalling 36 credits are compulsory.
- Elective unit standards totalling a minimum of 16 credits.

EQUIPMENT NEEDED

- Welding rods • Acetylene & oxygen • Hand tools • Welding machine • PPE • Gloves • Goggles • Boots • CO2 Gas bottles • Argon gas bottles • Grinder.

MARKET INFORMATION

Target Market: Welders without formal qualifications • Entrepreneurs • Mechanics • Electricians • Various Tradesmen.
Target Industries: Manufacturing • Mining • Construction • Small businesses • Maintenance and repairs • Municipalities.

COURSE INFORMATION

- **Mentor Requirements:** Mentor must have at least 5 years' experience in an engineering environment.
- **Workplace Approval:** Required
- **Workplace Requirements:** Learners must be exposed to all Outcomes related to this qualification.

SKILLS OUTCOMES

- Core and Fundamental:
- Use and apply mechanical and welding technology, techniques, processes and skills, as applied in the fabrication and welding industry, using appropriate tools and measuring equipment.
- Use and apply a variety of fillet welding, oxy-fuel cutting and oxy-fuel joining processes.
- Demonstrate knowledge of the welding industry and its productivity requirements, by applying appropriate work-procedures.
- Communicate effectively in order to achieve personal, business and organisational objectives (Range: reading and interpreting work instructions, documents and drawings; maintaining effective relationships; exploring options for further learning).
- Welding Safety and applicable work-site experience.
- Effective communication techniques within the workplace.
- Numeracy skills applicable to the welding environment.
- Dealing with HIV-AIDS.
- Electives (depending on which electives are chosen):
- Mechanical and welding technology concepts, techniques and processes are explained and applied within a fabrication and welding context.
- Tools, measuring equipment and engineering materials are used and applied in accordance with performance standards.
- Occupational health, safety and environmental legislation, including safety practices and procedures, are applied to the fabrication and welding industry in accordance with standard operating procedures.
- Welding machinery, tools and equipment, are cleaned and stored according to standard operating procedures.

GENERAL INFORMATION

Credit Accumulation Transfer (CAT): CAT exemption is only applicable to approved learners. Approved learners will have reduced contact days. Learners who do not meet the CAT requirements will be required to complete Part 1 and Part 2 of every Cluster.

FISA Requirements: Final Integrated Summative Assessment is not requirement for the successful completion of this learnership.

Recognition of Prior Learning (RPL): RPL is not available for this qualification

Training Methodology: This learnership is not available on UHub

UNIT STANDARDS

Cluster 1 (compulsory)

Outcome	SAQA ID	Name of Unit Standard	Credits
Core	14683	Apply work site practices	5
Elective	13222	Deal with safety, health and environmental emergencies in the workplace	4
Core	14712	Identify and select material to specification	5
Elective	243055	Prepare and secure work pieces for welding (includes the use of manipulators)	8

- **Recommended training days for Cluster 1 is 5 days**

Cluster 2 (compulsory)

Outcome	SAQA ID	Name of Unit Standard	Credits
Core	12219	Select, use and care for engineering power tools	6
Core	119744	Select, use and care for engineering hand tools	8
Core	12476	Select, use and care for engineering measuring equipment	4
Core	14713	Use welding definitions and symbols	5
Core	14722	Describe the welding industry's composition, its productivity requirements and communication techniques	5

- **Recommended training days for Cluster 2 is 6 days**

Cluster 3 (compulsory)

Outcome	SAQA ID	Name of Unit Standard	Credits
Core	243063	Weld carbon steel work pieces using the shielded metal arc welding process in the downhand position	15
Core	243069	Braze metals using the oxy-fuel brazing process	6
Core	243072	Weld work pieces using the oxy-acetylene gas welding process in the downhand position	10
Core	243066	Weld carbon steel work pieces using the gas metal arc welding process in the downhand position	8
Core	243076	Weld carbon steel work pieces using the cored-wire welding process in the downhand position	8
Core	243068	Weld carbon steel work pieces using the gas tungsten arc welding process in the downhand position	15
Core	243067	Cut materials using the oxy-fuel gas cutting process (manual cutting)	6

- **Recommended training days for Cluster 3 is 13 days**

Cluster 4 (compulsory) – Communication Skills – Credit Accumulation Transfer is applicable to the unit standards below

Outcome	SAQA ID	Name of Unit Standard	Credits
Fundamental	119463	Access and use information from texts	5
Fundamental	9009	Apply basic knowledge of statistics and probability to influence the use of data and procedures in order to investigate life related problems	3
Fundamental	7480	Demonstrate understanding of rational and irrational numbers and number systems	3
Fundamental	119454	Maintain and adapt oral/signed communication	5
Fundamental	12444	Measure, estimate and calculate physical quantities and explore, describe and represent geometrical relationships in 2-dimensions in different life or workplace contexts	3
Fundamental	119460	Use language and communication in occupational learning programmes	5
Fundamental	7469	Use mathematics to investigate and monitor the financial aspects of personal and community life	2
Fundamental	9007	Work with a range of patterns and functions and solve problems	5
Fundamental	119456	Write/present for a defined context	5

- **Recommended training days for Cluster 4 is 7 days**

Cluster 5 (electives) Choose any combination of unit standards with a total credit value of 16 and above

Outcome	SAQA ID	Name of Unit Standard	Credits
Elective	117867	Managing files in a Graphical User Interface (GUI) environment	3
Elective	116932	Operate a personal computer system	3
Elective	117902	Use generic functions in a GUI environment	4
Elective	243061	Assemble work pieces in jigs (minor amendments include the use of manipulators)	3
Elective	243075	Draw and interpret simple plate, pipe and structural steel plate, pipe and structural steel drawings	6
Elective	12240	Form and shape sheetmetal using hand or power operated machines	8
Elective	116235	Operate a pendant controlled overhead crane	5
Elective	12484	Perform basic fire fighting	4
Elective	12483	Perform basic first aid	4
Elective	14706	Perform basic rigging procedures	4
Elective	243056	Weld carbon steel work pieces using the shielded metal arc welding process in all positions	16
Elective	243064	Weld carbon steel work pieces using the gas metal arc welding process in all positions	15
Elective	243055	Prepare and secure work pieces for welding (includes the use of manipulators)	8

- **Recommended training days for Cluster 5 is 3 days or more depending with the number of electives selected.**