

COSMO TRAINING ACADEMY

COURSE INFORMATION



Introduction

Cosmo Training Academy is a registered Authorised Training Body (ATB) of the International Institute of Welding (IIW).

The Cosmo Training Academy is a state-of-the-art welder training school, with twelve welding bays, situated at Silverton Pretoria. The academy is staffed with training instructors qualified with local and International Standards.

We can assist companies to improve both quality and productivity by improving the skill levels of their employees. The same programmes are also accessible for individuals to achieve skills that can help them to secure employment.

Trainees use industry standard equipment and each training bay is fitted with fume extraction. The use of materials and consumables is unlimited enabling trainees to make maximum use of training time.

Programmes offered for practical welding vary according to company/individual needs. The basic programmes are aimed at certification to code of construction levels using International welding procedures or employer procedures.

The COSMO Training Academy offers the International Institute of Welding's (IIW). In addition, COSMO Training Academy is an approved QCTO skills provider for the theoretical and simulated practical learning requirements of the Welder apprenticeship.

Product and application training (Welding machine training)

When buying a welding machine at Cosmo Industrial and/or similar company, join one of our training programs and find out more about using and installing our products. This includes hands-on training in the different applications, selection and installation of the specific machine that you have bought.

Our facilitators are qualified welders with years of experience, who work onsite with our customers, every day.

The facilitator is designed to increase your team's skills, reduce mistakes onsite and associated costs.

Our programs are held at Cosmo Training Academies premises or we can come to your office or jobsite.

You will be trained on:

- Typical applications
- Correct selection and use of our products
- The most important rules of installation and common mistakes
- The set-up and safe use of your machine

REMEMBER that training will be on your OWN machine.

Training can be tailor made to address your specific process needs.

The training excludes all Personal Protective Equipment (PPE).

Terms and conditions:

- Per individual, per machine user
- Valid for 3 months from date of purchase (applicable to Cosmo Industrial)
- Contact info@cosmotraining.co.za

Pricing: Please refer to the pricelist.

Duration: ONE (1 day)

Basic welder course

This course focuses on teaching the learner the basics needed to work with welding equipment. This course focuses all the different processes and positions. Basic welding techniques are tailor made for the individual for upskilling and learn new techniques.

Alignment

This is a practical course, and the modules will be done in a fully equipped workshop.

Learning outcomes

Upon completion of the workshop, learners will understand:

- Introduction to the different welding processes: [SMAW ("Stick"); GMAW ("CO2 /MIG/MAG"), GTAW ("TIG/Argon"), FCAW ("flux core/core wire")]
- Training will be aimed at meeting the needs of the welder and will be aimed to take account of the entry skill level and the desired result.
- Understand the basic firefighting, first aid and workplace safety pertaining to welding

IMPORTANT:

- You will receive a certificate of attendance.
- The training excludes all Personal Protective Equipment (PPE).

Pricing: Please refer to the pricelist.

Duration: FIVE (5 days)

International Welder Diploma

Cosmo Training Academy is a registered Authorised Training Body (ATB) of the International Institute of Welding (IIW).

The International Welder (IIW) programme is developed to address the need for highly skilled welders.

IIW alignment

Training and assessment in the IIW programme are linked to the requirements of the International Standards, ISO 9606. The ISO 9606 is generally used in South Africa; however, it is like other standards which are relevant in South Africa, e.g. ASME IX and AWS.

The IIW programme provides a combination of theoretical knowledge and practical skills. The theoretical knowledge is assessed by a theoretical examination. Practical skills are assessed by various tests of increased difficulty, which includes a visual and an independent examiner for the qualification.

The programme is presented at three levels:

- Fillet,
- Plate, and
- Pipe welder

Trainees are required to start with fillet welding.

Qualification for experienced welders

Experienced welders may enter the programme at any level. To obtain the qualification, the relevant theory training and examination will need to be completed.

Learning outcomes

Upon completion of the workshop, learners will be able to:

- To demonstrate the required level of skill in accordance with ISO 9606 or similar standard (ASME IX) and pass the required theoretical examination.
- To produce basic Fillet, Plate and Pipe Welds with the chosen welding process depending on the level of qualification and have a basic understanding of the theory of welding.
- The graduating welder will be awarded with an IIW Diploma plus a Welder Performance Qualification (WPQ) as per International Standards.

IMPORTANT:

- Theoretical knowledge will be assessed by means of a theoretical assessment.
- Practical skills are assessed by various tests of increased difficulty, which includes a visual and an independent examiner for the qualification.

Number of training days: The following table set out the theoretical and practical.

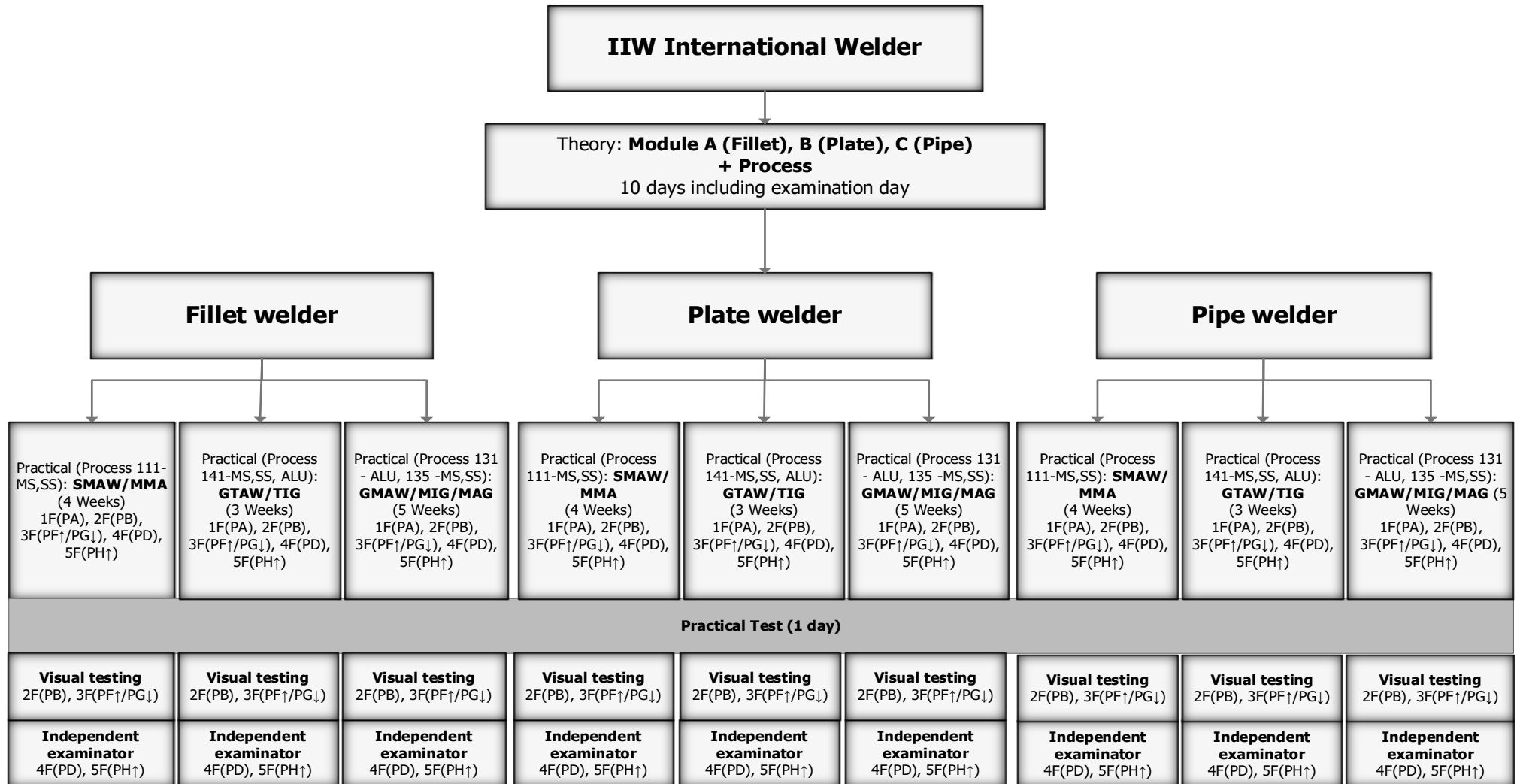
THEORY MODULES 10 Days	WELDING PROCESS					
	SMAW(MMA) STICK WELDING		GTAW (TIG) ARGON WELDING		GMAW (MAG) and FCAW CO ₂ and FLUX CORE WELDING	
	PRACTICAL MODULE	QUALIFICATION TEST (ISO 9606)	PRACTICAL MODULE	QUALIFICATION TEST (ISO 9606)	PRACTICAL MODULE	QUALIFICATION TEST (ISO 9606)
MODULE A	4 WEEKS	2 Test pieces	3 WEEKS	2 Test pieces	5 WEEKS	2 Test pieces
A + Steel + Process						
MODULE B	8 WEEKS	2 Test pieces	6 WEEKS	2 Test pieces	9 WEEKS	2 Test pieces
A + B + Steel + Process						
MODULE C	6 WEEKS	2 Test pieces	4 WEEKS	2 Test pieces	ON REQUEST	2 Test pieces
A + B + C + Steel + Process						

NOTE:

- PRACTICAL MODULE MINIMUM 3 WEEKS. (THIS IS AN ESTIMATED TIME FOR THE UNEXPERIENCED WELDER.)
- THE PRICE INCLUDE ALL CONSUMABLES, MACINERY AND TOOLBOX.
- **LEARNER TO SUPPLY OWN PPE WHICH INCLUDES A FLAME RETARDANT OVERALL, SAFETY BOOTS AND WELDING HELMET.**
- THE QUALIFICATION TEST INCLUDE AN INDEPENDENT EXAMINER AND 2 TEST PIECES.
- **PLEASE REFER TO THE PRICELIST FOR COSTING.**

ADDITIONAL MATERIAL SPECIFIC THEORY MODULES 1 Day	Module PSS: Stainless Steel
	Module PAL: Aluminium
ADDITIONAL PROCESS SPECIFIC THEORY MODULES 1 Day	Module SA (SMAW)
	Module ST (GTAW)
	Module SM (GMAW)

IIW INTERNATIONAL WELDER PROCESS



Fast Track International Welder Qualifications – for experienced welders – Recognition of prior learning (RPL)

(Please refer to the IIW Guideline for International Welder - IAB-089r0-22 – Part III)

Most welders have developed a speciality and are highly experienced in one position and one area and do not want to or need to go through the entire IIW programme again. They, therefore, require a focused qualification that recognises their specific area of expertise.

For example, a structural steel welder would prefer to focus on plate welding theory while tube welders in the petrochemical or power generation sectors are far more familiar with specialised tube welding which forms the bulk of what they do.

The new streamlined option bypasses the need for experienced welders to go back to basics and complete the full course and provides the highly specialised knowledge and assessment to take experienced welders to the next level.

To be able to enrolment and/or for admission, you will need the following:

Applicants must possess sufficient knowledge of, or education in, metalworking to follow the course. They must also have a level of health, and physical and mental capability, to undergo the training for which they are applying.

For Fillet Welder, Plate Welder and Tube Welder, two different diplomas are possible:

- **Comprehensive Diploma** when the learner performs all examinations (practical and theoretical)
- **Standard Diploma when** the learner only performs some of the examinations.

The Access conditions for Experienced route (single or double process) shall be:

- Must have a valid welder approval, and
- Professional experience as welder – Two (2) years in the last Three (3) years that shall be confirmed by:
 - Using valid or expired welder's approvals, that will show he/she has been a welder for at least two years, and/or
 - CV plus Employer letters endorsing he/she has been a welder for at least two years, more than one letter is accepted, and
 - Shall perform a regular welder approval test piece at the level the applicant states on his/her CV, the evaluation by visual inspection, and the way he/she has performed the examination
 - On the application the candidate shall clearly define the level sought for his/her experienced route qualification:
 - Fillet or Plate or Tube.
 - Single process or double process.
 - Identify welding process or processes.
 - Base material(s).

Learning outcomes:

- The IIW Standard Diploma covers the theory behind a single welding process either fillet, plate or pipe in the form of lectures as well as written and practical tests. If these are passed the learner receives an IIW Diploma and a Welding Certificate of record which provides unequivocal proof that the welder complies with the IIW standards.

Upon completion of the course, learners get an International Welder certificate that is proof of them having trained in a certain position and process and material.

For more information contact [**Info@cosmotraining.co.za**](mailto:Info@cosmotraining.co.za)

Pricing: Will depend on the needs of the customer. This includes external laboratory testing of practical work pieces and an independent examiner.

Practical welder

Welding is a critical process that is controlled by both national and international standards and specifications to control the quality of the deposited weld metal and the skill of the welder. Welders can work in a unit or factory, which produces fabrications and/or structures for industries as diverse as civil engineering, mechanical engineering, transport, marine engineering, construction, service, and leisure industries.

A welder prepares, assembles, and joins a wide range of metals and metal alloys using various welding processes. A welder will use mainly processes where the heat utilized for welding will be an electric arc to join a range of materials. Electric arc processes utilise a gas shield or a flux to protect the molten weld area from contamination by the surrounding atmosphere.

A welder needs to be able to interpret engineering drawings, standards and symbols and correctly translate these requirements into accurate structures and fabrications. They need to gain specific knowledge of how welding will affect the structure of the material being welded.

Welders join sections, pipe and plate and fabricate large and small pressure vessels. They must be able to select the correct equipment, process variables and welding technique depending upon the material being joined, and they use grinding and cutting equipment to prepare welded joints.

Practical welder training can be booked on a week-by-week basis, either at COSMO Training Academy or in-house, for the purpose of upskilling the workforce and/or certification to code of construction levels using COSMO Training Academy welding procedures or employer procedures.

Alignment

Training and assessment courses can be developed to suit company or individual requirements. The practical welders' course is intended to qualify welders according to the AWS, ASME IX, and ISO 9606 standards.

Different test pieces may be required for each welding process and position. Tests can be tailored to meet the relevant standard. Practical welder training can be booked in weekly blocks.

Training can be provided for practical welding with the following welding processes:

- SMAW/MMA – 'Stick welding'
- GMAW/MIG/MAG – 'CO2 welding'
- GTAW/TIG welding – 'Argon welding'
- FCAW – Flux cored welding

Learning outcomes

Upon completion of the workshop, learners will be able to:

- To demonstrate the required level of skill in accordance with ISO 9606 or similar standard (ASME IX) and is tailored to the needs of the company/individual candidate.
- Welding Safety
- Practical training on the specific code required.
- Training will be aimed at meeting the needs of the welder and will be aimed to take account of the entry skill level and the desired end result.

Pricing: Will depend on the need of the customer. This includes external laboratory testing of practical work pieces and an independent examiner.

Duration: Will depend on the needs of the customer and the experience of the welder

IMPORTANT:

- This certificate is only valid for six (6) months.
- The training excludes all Personal Protective Equipment (PPE)

❖ **We can assist companies with pWPS, WPS, PQR and WPQR through an accredited SANAS laboratory on request.**

QCTO Welder

This qualification is a listed trade qualification and falls within the Occupational Qualifications Framework of the NQF of South Africa.

Of specific importance is the fact that this qualification elevates training of Welders in South Africa to accepted international standards. The availability of this Welding qualification for training of trades persons to accepted international standards is regarded as an important resource to support national artisan development initiatives in South Africa.

The qualification ensures that a sound skills base is developed at artisan level that can serve as the foundation for achieving coded welding status required for the execution of specialised welds by industry.

Minimum admission requirements:

- NQF Level 1 with Mathematics and Science.

Career opportunities

A wide range of industries in the South African economy employs welders, qualified as artisans, including companies in the manufacturing sector, mining, petrochemical as well as engineering contractors in large and small projects – including projects that are key to the economic development of South Africa such as power supply.

This qualification addresses one of the key trades in which labour market shortages for skilled artisans are experienced. Reports of large numbers of welders contracted from other countries to address the scarcity of welding skills are common.

Duration

This is a **3-year Programme**. Students rotate between time spent at COSMO Training Academy and time spent in the workplace.

Course content:

Knowledge modules

- Introduction to the welding trade, NQF Level 2
- Occupational Safety, Health and Environmental Protection, NQF Level 2
- Welding schematics, calculations, welds and welded joints, NQF Level 2
- Weld imperfections, NQF Level 2
- Cutting and gouging, NQF Level 2
- Welding consumable classification and handling, NQF Level 2

- Metals and weldability of metals, NQF Level 3
- Fusion welding, NQF Level 3
- Arc welding, NQF Level 3
- Gas welding and cutting, NQF Level 3
- Welding codes, standards and parameters, NQF Level 4
- Shrinkage, residual stress and distortion, NQF Level 4
- Manual Metal Arc, MMA welding process, NQF Level 4
- The Metal Inert Gas/Metal Active Gas/Flux Cored Arc, MIG/MAG/FCAW welding process, NQF Level 4
- Manual Metal Arc, MMA welding process, NQF Level 4
- Welding inspection and quality, NQF Level 4

Practical skill modules

- Fabricate simple components or work pieces, NQF Level 2
- Cut, gouge and gas weld material manually, NQF Level 2
- Perform fillet welds using the Shielded Metal Arc Welding process, NQF Level 3
- Perform fillet welds using the Gas Metal Arc Welding process, NQF Level 3
- Perform fillet welds using the Gas Tungsten Arc Welding process, NQF Level 3
- Perform plate butt welds using the Shielded Metal Arc Welding process, NQF Level 4
- Perform plate butt welds using the Gas Metal Arc Welding process, NQF Level 4
- Perform plate butt welds using the Gas Tungsten Arc Welding process, NQF Level 4
- Perform pipe welds using the Shielded Metal Arc Welding process, NQF Level 4
- Perform pipe welds using the Gas Metal Arc Welding process, NQF Level 4
- Perform pipe welds using the Gas Tungsten Arc Welding process, NQF Level 4

Workplace modules

This qualification also requires the following compulsory Work Experience Modules:

- Cut and gouge a range of materials in the workplace, NQF Level 2
- Produce a range of fillet welds using various welding processes in a workplace, NQF Level 4
- Care for, control and handle consumables and materials in a workshop, NQF Level 2
- Produce a range of plate welds using various welding processes in a workplace, NQF Level 4
- Teamwork, communication and reporting in the workplace, NQF Level 3
- Produce a range of pipe welds using various welding processes in a workplace, NQF Level 4

The qualification can be broken down in the following yearly process:

Year 1								
Knowledge modules	Credits	Training days	Practical modules	Credits	Training days	Work experience modules	Credits	Training days
Introduction to the welding trade	2	3 days	Fabricate simple components or work pieces	4	5 days	Cut and gouge a range of materials in the workplace	8	16 days
Occupational Safety, Health and Environmental Protection	4	5 days	Cut, gouge and gas weld material manually	12	15 days	Care for, control and handle consumables and materials in a workshop	4	8 days
Welding schematics, calculations, welds and welded joints	6	8 days						
Weld imperfections	2	3 days						
Cutting and gouging	2	3 days						
Welding consumable classification and handling	4	5 days						
Total credits	20			16			12	
Total Training days		27 days			20 days			24 days
Year 2								
Knowledge modules	Credits	Training days	Practical modules	Credits	Training days	Work experience modules	Credits	Training days
Metals and weldability of metals	8	10 days	Perform fillet welds using the Shielded Metal Arc Welding process	12	15 days	Teamwork, communication and reporting in the workplace	8	16 days
Fusion welding	6	8 days	Perform fillet welds using the Gas Metal Arc Welding process	12	15 days			
Arc welding	8	10 days	Perform fillet welds using the Gas Tungsten Arc Welding process	16	20 days			
Gas welding and cutting	4	5 days						
Total credits	26			40			8	
Training weeks		33 days			50 days			16 days

Year 3								
Knowledge modules	Credits	Training days	Practical modules	Credits	Training days	Work experience modules	Credits	Training days
Welding codes, standards and parameters	6	8 days	Perform plate butt welds using the Shielded Metal Arc Welding process	16	20 days	Produce a range of fillet welds using various welding processes in a workplace	40	80 days
Shrinkage, residual stress and distortion	4	5 days	Perform plate butt welds using the Gas Metal Arc Welding process	16	20 days	Produce a range of plate welds using various welding processes in a workplace	40	80 days
Manual Metal Arc, MMA welding process	7	9 days	Perform plate butt welds using the Gas Tungsten Arc Welding process	16	20 days	Produce a range of pipe welds using various welding processes in a workplace	52	104 days
The Metal Inert Gas/Metal Active Gas/Flux Cored Arc, MIG/MAG/FCAW welding process	7	9 days	Perform pipe welds using the Shielded Metal Arc Welding process	16	20 days			
Manual Metal Arc, MMA welding process	7	9 days	Perform pipe welds using the Gas Metal Arc Welding process	16	20 days			
Welding inspection and quality	4	8 days	Perform pipe welds using the Gas Tungsten Arc Welding process	20	25 days			
Total credits	35			100			132	
Training days		48 days			125 days			264 days

SUMMARY FOR TOTAL TRAINING DAYS:

Year 1		Year 2		Year 3	
Training at COSMO Training academy		Training at COSMO Training academy		Training at COSMO Training academy	
Theory	27 days	Theory	33 days	Theory	48 days
Practical	20 days	Practical	50 days	Practical	125 days
Workplace experience training		Workplace experience training		Workplace experience training	
24 days		16 days		264 days	

Pricing: Please refer to the pricelist

The training excludes all Personal Protective Equipment (PPE)

South African ARPL Trade Test

This process is designed for a person that have completed they're on the job training and workshop experience as described by the relevant SETA. The process will consist of practical and theoretical assessments on all trade-test related tasks as indicated by NAMB for the specific trade. This process starts with assessments/evaluation to identify possible gaps. Learners will receive training material as well as a timetable to keep them on track with their progress.

Who is the target audience?

The ARPL process is aimed at persons who did complete their Practical experience as prescribed by MerSeta in the welding trade.

Duration:

- Trade Test Examination (RPL Testing – theory and practical): One (1) day
- Practical training on the preparation tasks: Twenty (20) days
- Trade test: Two (2) days

REQUIREMENTS TO QUALIFY FOR ARTISAN RPL (RECOGNITION OF PRIOR LEARNING) (PREVIOUSLY SECTION 28) TRADE TEST

QUALIFYING CRITERIA CATEGORIES:

- Minimum three (3) years** relevant work experience within South Africa and **N2 certificate** including **Relevant Trade Theory** or
- Minimum three (3) years** relevant work experience within South Africa and **Relevant Engineering NQF Level 3 Certificate** or
- Minimum three (3) years** relevant work experience within South Africa and **Technical Grade 12 with Maths, Engineering Science and Related Theory Subject** or
- Minimum Eighteen (18) months** relevant work experience within South Africa with **Relevant Engineering NCV Level 4 Certificate** or
- Minimum Eighteen (18) months** relevant work experience within South Africa and **Relevant and Directly Related to the Trade Theory Subjects** N6 certificate or National Technical Diploma (S or N Stream) or
- Minimum four (4) years'** work experience within South Africa with Grade 9 (Standard 7) or
- Minimum three (3) years** relevant work experience within South Africa and successful completion of an **ARPL Toolkits Assessment for the trades that already have toolkits in place** – Welder

- h. Successful completion of the MerSeta registered **NQF Level 2, 3 and 4 Trade Related Learnerships** with minimum two (2) years, inclusive of the institutional and workplace components.

DOCUMENTS REQUIRED WITH THIS APPLICATION (CERTIFIED BY THE COMMISSIONER OF OATH):

NB! Certified documents must not be older than three (3) months.

1. Clear originally certified copy of **Identity Document**
2. Clear originally certified copy of highest **Educational Qualification**
3. Clear original or originally **certified service letter** on a company letter head (**with company registration number**) as proof of experience **within South Africa** with detailed daily duties, start date and signed off by the duly authorised person.
4. Where applicable, documentary proof showing that the applicant is legally in South Africa with exclusion of medical permit.
5. A candidate, who attempted a trade test and **passed at least 50%** of the number of tasks given, will be given recognition for **those tasks. The recognition will be retained by the candidate for a maximum of 3 attempts or 18 months** from the date of successful completion of the trade task whichever comes first. Thereafter, no credit or recognition of tasks applies.
6. The MerSeta will communicate the outcome of the application directly with the applicant and **not to third party.**
7. An arrangement may be made for the MerSeta to pay for the trade test fee for unemployed candidates.
8. A pre-assessment may be recommended whereby the cost will be borne by the employer or candidate.
9. Relevant work experience means according to training schedules for the trade.
 - ❖ The above criteria is adopted from the Trade Test Regulations vol. 599 No. 38758 of 8 May 2015 Gazette No.10425

Process outline

Application

- Complete an application form as supplied by NAMB at the Training Centre.
- Provide clear copies of ID and Highest school qualification Certified.
- Provide PoE consisting of original company letters on company letter heads to prove workplace experience, previous training documents, certificate and logbooks.
- Complete a self-evaluation checklist on all related trade test tasks.

Orientation:

- Evaluation of PoE
- Technical team verify self-evaluation
- Registration for process

Training process

- Interview to discuss orientation outcome on how to close gaps identified
- Minimum four weeks intensive training on all trade-test related tasks as indicated by NAMB for welding

Candidate evaluation

- Knowledge assessment
- Practical Assessment
- Any tasks not yet competent will be re assessed after 10 days training
- Workplace experience Assessment
- Compile a complete PoE

Verification

- Complete PoE sends to NAMB for final verification which will take approximately six to ten weeks.
- NAMB will send approval to trade test centre
- Trade test centre will issue a date for test

Trade test

- Twenty days intensive trade test revision
- Final two-day test on a minimum of four tasks at a trade test centre
- If competent they issue a statement of results.
- NAMB will issue a red seal certificate after 10 weeks.

Pricing: Please refer to the pricelist

The training excludes all Personal Protective Equipment (PPE)

Other courses:

Course Description:	Duration:
First Aid Level 1	2 days
First Aid Level 2	2 days
First Aid Level 3	2 days
COMBO: First Aid Level 1,2 and 3	6 days
First Aid Level 1 - Refresher	1 day
First Aid Level 3 - Refresher	3 days
Basic Fire Fighting	1 day
Evacuation Marshall	1 day
Fire Fighting and evacuation	2 days
Legal Liability	1 day
SHE Rep - Safety, Health and Environmental Representative	1 day
HIRA – Hazard Identification and Risk Assessment	1 day
Health and Safety General	1 day
Accident and Incident Investigation	1 day
HIV/AIDS Awareness	½ day
Ladder Safety and Safe Handling	1 day
Confined Space Entry Training with B/Apparatus	2 days

Specialised Training

Forklift Novice	5 days
Forklift Refresher – Re-Certification	1 day
Dangerous Goods – Drivers	1 day
Dangerous Goods – Supervisors/Workers	1 day
Basic Fall Arrest with Basic Rescue Novice (US229998 + 229995)	5 days
Basic Fall Arrest with Basic Rescue Refresher (US229998 + 229995)	1 day
Supervisory Techniques	5 days

Other

Venue Hire (max 12 delegates per day)
Internal Training (Full day)
Internal Training (Half day)

Learnerships, Skill Programmes and Apprenticeships

National Qualification Learnerships NQF 1 – 5	12 months
Supervisory Techniques	10 days
Supervisory Management Phase 1	4 days
Basic Welding Course Level 2	30 days
Basic Shielded Metal Arc Welder (SMAW)	20 days
Basic Gas Metal Arc Welder (GMAW)	20 days
Gas Tungsten and Metal Arc Welding Skills (GTAW)	20 days
Occupational Certificate: Welder SAQA 94100	3 years

Other Welding Courses: (minimum of 4 delegates)

IIW Welding Practitioner	18 days
IIW Welding Specialist	33 days
Fabrication Inspector Level 1	20 days

If you need training on any course not specified above.

Please feel free to contact, email or visit our Academy.

Cosmo Training Academy

449 Pretoria Road

Silverton

0184

012 846 3388/012 846 3300

info@cosmotraining.co.za/anzel@cosmotraining.co.za