

Southern African Institute of Welding



# COURSE PROSPECTUS 2025



PROMOTING WORLD CLASS EXCELLENCE IN WELDING,  
NON-DESTRUCTIVE TESTING AND ALLIED TECHNOLOGY



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your cellular phone.

[www.saiw.co.za](http://www.saiw.co.za)

Please refer to contacts on page 26

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**SAIW offers industry developed training programmes, which aim to provide the candidates with the necessary skills to meet industry needs.**

**Our skills programme is in the process of being registered with the relevant QCTO, and once registered, may be recognised as part qualifications and contribute credits towards NQF aligned qualifications.**

# FOCUSED APPROACH TO 2025 Course Offering

**Rationalised number of courses means students should **PLAN AHEAD** and **BOOK TODAY!****

The aftershocks of the COVID-19 pandemic and resultant shifts in student numbers and their availability have seen the SAIW rationalise its current approach so that although the number of scheduled courses we offer remains exactly the same, but the number of times these particular courses are offered through the year has been reduced, to provide a more streamlined offering. In line with this more focused approach, we are therefore proud to launch our courses for 2025!

**(SEE THE FULL LIST IN THE TABLE ON THE NEXT PAGE WHICH PROVIDES A CLEAR IDEA OF THE COURSES WE OFFER).**

## Cost benefit

The cost benefit of this streamline approach is that a third of our courses have been reduced in price and more than half our course prices have been increased at less than the inflation rate.

## Plan ahead

The more streamlined and cost-effective approach means that students need to plan their training schedule for 2025 well in advance and book early to ensure they are in time for their desired course start date next year.  
**See your options on the next page.**

## Non-scheduled & Regional Courses

**DEMAND DEPENDENT**

Despite this streamlined approach, the SAIW remains committed to offering scheduled and non-scheduled regional courses in Cape Town and Durban. A minimum of five students are required per course to run. As soon as the minimum number of people have booked in your region, the course will be scheduled.



# SAIW 2025 COURSE START DATES AT A GLANCE....

## WELDING COORDINATORS

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
International Welding Practitioner (IWP)	JHB							JHB				
International Welding Specialist (IWS)						JHB						
International Welding Technologist (IWT)						JHB						

## WELDING INSPECTORS

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Introduction to Welding Inspection	JHB				JHB		JHB			JHB		
SAIW Welding and Fabrication Inspector Level 1	JHB	SEC	JHB		JHB	JHB	JHB	JHB	JHB	CPT		
SAIW Welding and Fabrication Inspector Level 2		JHB DBN			SEC CPT		JHB					

## COMPETENT PERSONS AND INSPECTORS OF PRESSURE EQUIPMENT

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Competent Persons Steam Generators (CP:SG)	JHB					JHB			DBN			
Competent Persons Pressure Vessels (CP:PV)	JHB		CPT		DBN							

## MISCELLANEOUS

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Engineers' Appreciation of Welding	JHB							JHB				
ASME Codes of Construction and the National Board Inspection Code	JHB										CPT DBN	
AWS D1.1 Steel Structures				JHB DBN CPT								
Paint Inspector									JHB			
Welding Symbols					JHB			JHB				

# NON-DESTRUCTIVE TESTING (NDT)

## PENETRANT TESTING

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
LEVEL 1	JHB					JHB			JHB		JHB	
LEVEL 2		JHB					JHB			JHB	JHB	

## MAGNETIC PARTICLE TESTING

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Level 1		JHB				JHB				JHB	JHB	
Level 2			JHB				JHB			JHB		

## VISUAL TESTING

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Level 1	JHB				JHB				JHB			
Level 2			JHB				JHB					

## RADIOGRAPHIC TESTING

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Level 1	JHB											
Interpreters Level 2					JHB							
Level 2			JHB				JHB					

## ULTRASONIC TESTING

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Wall Thickness Level 1	JHB		JHB				JHB		JHB		JHB	
Level 1		JHB					JHB					
Level 2					JHB							

## EDDY CURRENT TESTING

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Level 1 Surface						JHB						
Level 1 Tubes						JHB						
Level 2 Surface			JHB									
Level 2 Tubes							JHB					





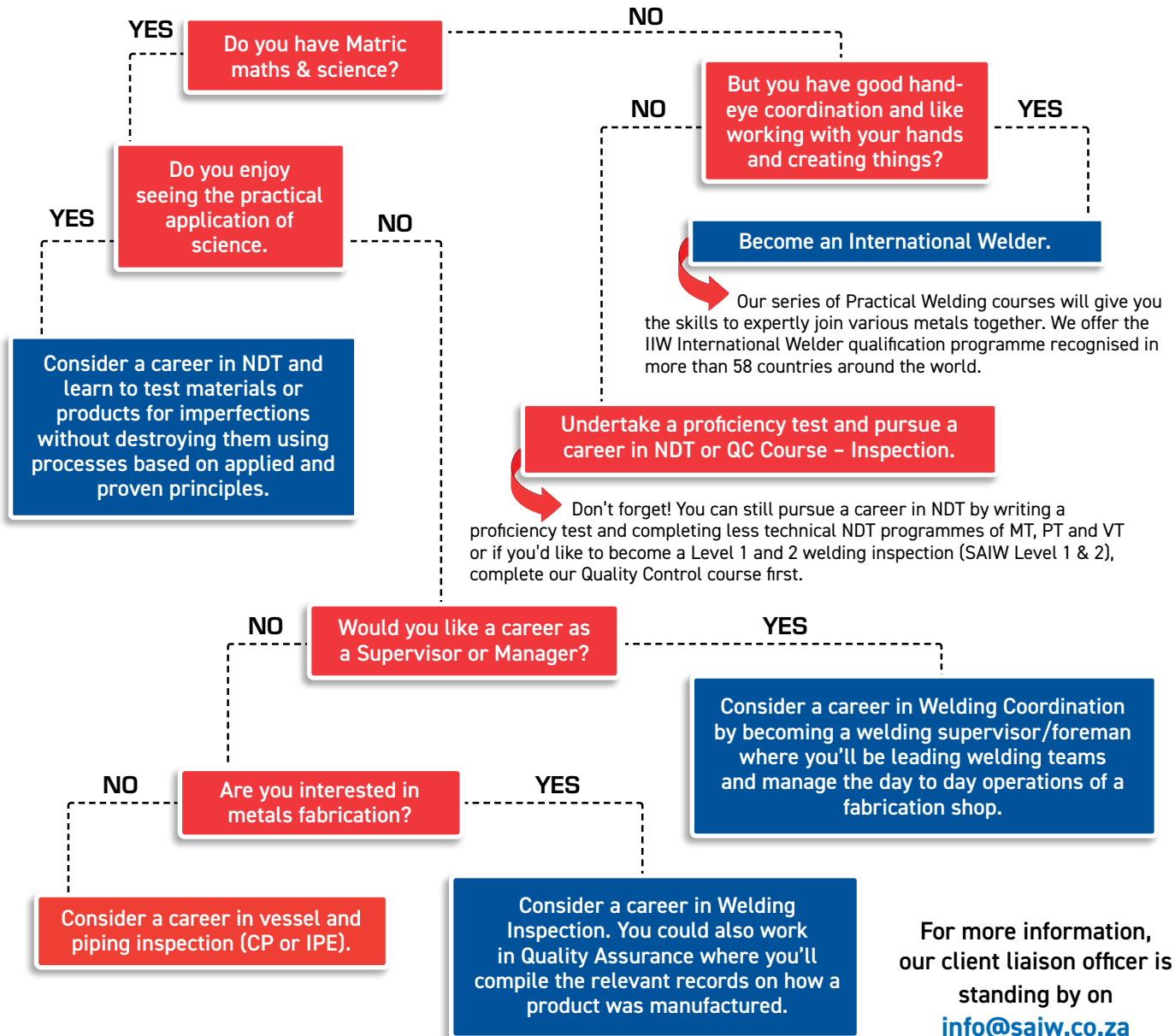
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Please refer to contacts on page 26



# HOW CAN SAIW POWER OUR CAREER?



For more information,  
our client liaison officer is  
standing by on  
[info@saiw.co.za](mailto:info@saiw.co.za)

# CHOOSE A Career in Welding

**Using the SAIW to deliver your preferred programme will ensure you a bright and prosperous career, so register today!**

**For more information  
contact our Client Liaison  
on 011 298 2100.**

In recent decades, welding has become a dominant process in the fabrication of industrial products and in the building of structures from steel. It is used in all phases of production and is needed not only nationally but also internationally in almost every industry ranging from micro-electronics to construction of petrochemical plants, power generation, buildings and transport. Due to the diversity of welding-related projects, there is excellent flexibility to switch industries without the need to change your career.


The fact that welding is in a strong growth trend accounts for the mounting interest in it as a career. Completing a course in welding can virtually assure you of a gainful employment opportunity for advancement during your career. Similarly, those who become welding inspectors, welding coordinators, non-destructive testing (NDT) technicians, professional welding engineers or designers can look forward to extremely rewarding career opportunities.

SAIW has been offering training courses in both welding and NDT technologies since the late 1970s. You can choose to be a practical welder where you will join materials together using any of the various welding processes. As a welder you can progress your career

by further study in welding coordination to become a welding supervisor/foreman. The welding coordination courses are not only for welders. People hoping for a career in leading welding teams and managing the day-to-day operations of a fabrication shop can enrol on these courses too, for example: welding engineer, welding technologist, welding specialist etc.

SAIW courses also present opportunities for you to work as a welding inspector, a career in which you will be responsible for verifying that the welders are following their work instructions, and the welding supervisors are doing their work according to approved and implemented procedures. As a welding inspector you can also work in quality assurance where you compile the relevant information for records on how a product was manufactured.

The SAIW also offers NDT courses in six different testing methods. Personnel form part of the chain of various fields of expertise, which are used to ensure the world is using high quality products which pose little risk to the end user. Personnel test materials or products for any imperfections without destroying the products or materials and is not only limited to testing of welds, but can be extended to various product sectors such



as castings, forgings, tubes etc. and applied in most of the industrial sectors such as pre-and in-service testing, power generation, petrochemical etc. This is achieved by using various applied scientific principles and therefore, a career in NDT will never stagnate. There will always be the opportunity to diversify into other methods or alternatively, you can specialise in one or more methods to an advanced level of competency.

SAIW courses are intended to meet best practice international standards and many are accredited by the International Institute of Welding (IIW) or International Committee for Non-Destructive Testing (ICNDT) Mutual Recognition Agreement (MRA).

SAIW inspection courses also fulfil the requirements of local certification programmes for inspection personnel (SAQCC IPE and CP) which are approved by the Department of Employment and Labour.

SAIW practical welding courses are accredited by IIW for the International Welder (IW) programme and welder apprenticeships by QCTO.

**The SAIW offers training courses at its Johannesburg Campus, and in Durban and Cape Town. Many SAIW courses are suitable for presentation at in-company training facilities.**

[www.saiw.co.za](http://www.saiw.co.za)

**Please refer to contacts on page 26**

Scan to download the SAIW Course Prospectus App onto your cellular phone.





## THE ENTIRE OFFERING OF SAIW COURSES

### COURSES

- QCTO Welder
- Welding Symbols
- Welding
- International Plate Welder
- International Fillet Welder
- International Pipe Welder
- Robotic Welding

- IIW Practitioner
- IIW Specialist
- Inspector to Specialist Bridging Course
- IIW Technologist

- Introduction to Welding Inspector
- Welding Quality Control
- SAIW Welding and Fabrication Inspector Level 1
- Bridging IWI B to Level 1
- SAIW Welding and Fabrication Inspector Level 2
- Competent Persons Pressure Vessels
- Competent Persons Steam Generator
- 5 Day Engineers – Appreciation of Welding
- ASME Code
- AWS D1.1
- Heat Treatment Practitioner
- Paint Inspector

- Visual Testing
- Eddy Current
- UTWT
- Industrial Radiographic Safety
- Portable Hardness Testing
- Appreciation of NDT for Engineers
- Penetrant Testing
- Magnetic Particle Testing
- Replica Metallography
- Radiographic Testing
- Ultrasonic Testing

### CAREER PATHS

#### PRACTICAL WELDER

- Artisan Welder
- Tradesman
- Boilermaker
- Pipe Welder
- Pipe Fitter
- Structural Steel Welder
- Welding Operator
- Artist/Sculptor
- Sheet Metal Worker
- Robotic Operator/ Programmer
- Safety Officer
- Welding School Instructor

#### WELDING COORDINATORS

- Welding Engineer
- Welding Technologist
- Robotic Operator
- Technical Sales Representative
- Estimator
- Welding/Fabrication Supervisor
- Project Manager
- Fabrication Workshop Manager
- Research & Development
- Fabrication Management
- Academic
- Quality Auditor
- Quality Engineer
- Fabrication Supervisor or Foreman

#### WELDING INSPECTORS

- Welding Lecturer
- Fabrication & Welding Inspector
- Competent Person – Pressure Vessels
- Competent Person – Steam Generators
- Quality Control Personnel
- Inspector of Pressurised Equipment
- Fabrication Foreman

#### NON-DESTRUCTIVE TESTING

- NDT Training, Examination & Certification
- NDT Consultant
- NDT Applied Scientist/ Physicist
- NDT Lecturer
- NDT Examiner
- NDT Auditor
- NDT Quality Engineering
- NDT Operator (Level 1)
- NDT Manager NDT Research/Developer
- NDT Technician (Level 2)
- NDT Technologist (Level 3)

# WOULD YOU LIKE TO BECOME A *WELDING INSPECTOR?*

YOU COULD WORK IN ANY FABRICATION ENVIRONMENT OR  
THE FUEL OR POWER GENERATION SECTORS OR EVEN IN A  
REFINERY OR MANUFACTURING PLANT

Matric Maths  
OR Science OR  
Welding Quality  
Control

START

 - Qualification

Inspector Level 2

Inspector Level 1

**PATH 1**

Visual Testing 1

Gain two years' work experience

CERTIFIED

Level 2  
Inspector

Ultrasonic Testing 1 - Wall Thickness

Visual Testing 2

CERTIFIED

Level 3  
Inspector

OR

**PATH 2**

ASME Codes of Construction

CERTIFIED

Inspector  
of Pressure  
Equipment  
(SAQCC-IPE)

Radiographic Testing -  
Film RT Interpreters only

2 Years' IPE experience (18 tasks)

For more information, our client  
liaison officer is standing by on  
[info@saiw.co.za](mailto:info@saiw.co.za)

# CAREER PLAN FOR Fabricator Inspectors

## 1 WELDING INSPECTOR

**SAIW Welding and Fabrication Inspector  
(Level 1)**  
4 Weeks  
*including IWI Basic Level (with oral exam)*

**SAIW Welding and Fabrication Inspector  
(Level 2)**  
4 Weeks

2 Years Inspector Experience

IWIP Standard

## 3 PAINT INSPECTOR

**SAIW Paint Inspector**  
1 Week

## 2 IPE

**ASME Codes of Construction and NBIC**  
2 Weeks

**RT Interpreters**  
2 Weeks

2 Years IPE Experience  
(19 Tasks)

IPE Certification

## 4 NDT

NDT Module's  
To facilitate understanding of NDT Reports  
MT\* PT\* UT\* RT\* VT\*  
1 Week\*



# CAREER PLAN FOR In-Service Inspectors

## 1 COMPETENT PERSON STEAM GENERATORS

2 Weeks training

CP experience  
Qualification Dependent  
(10 Steam Generator Inspections with  
certified CP)

Apply for Certification

CP Steam Generator Accreditation  
(CP-SG number)

## 2 COMPETENT PERSON PRESSURE VESSELS

3 Weeks training

CP experience  
Qualification Dependent  
(10 Pressure Vessels Inspections with  
certified CP)

Apply for Certification

CP Pressure Vessel Accreditation  
(CP-PV number)

# AWARDS

## Outstanding Performance on SAIW Courses

Each year SAIW makes the following awards:



**The Phil Santilhano Memorial Award**

**For the Top Student on either the Welding Inspector Courses or the Welding Coordination Courses**



**The Presidents' Award**

**For the Top student on Non-Destructive Testing Courses**



**Best Responsible Welding Coordinator Award**

All students attending relevant courses are automatically considered for each of these valuable awards, which are presented at the SAIW Annual Dinner.





If you want more  
information about the  
awards please contact  
your course lecturer

[www.saiw.co.za](http://www.saiw.co.za)

Please refer to contacts on page 26

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# ONLINE SYSTEM

- 1 ► Go to [www.saiw.co.za](http://www.saiw.co.za)
- 2 ► Click on – REGISTER FOR A COURSE

## New Students

1. Click on NEW STUDENT REGISTRATION - Complete required information (full names, email address and ID).
2. You will receive an email with a link to follow, which will allow you to complete your personal profile.
3. This request will be sent to the SAIW student management system for acceptance.
4. After acceptance, you will receive an email with login details.

## Returning Students

1. Pre-2018: Use your student number as both your USERNAME and PASSWORD, and complete the security code (CAPS only).
2. 2018 onwards: Use your student number as your USERNAME and your ID number as your PASSWORD, and complete the security code (CAPS only).

1. When you enter your username (student number), password (ID number) and security code (CAPS ONLY), you will log onto your personal profile dashboard.
2. Click on the course booking icon (green icon). This will open a screen where you will be able to select the course type (drop down menu).
3. Select course (eg: Magnetic Particle Testing Level 1; Welding & Fabrication Inspector Level 1; etc.) - this will open the available dates.
4. Select either the full course by selecting the small block on the far right, or if you want to do the course in the modular format (selected courses only), by selecting the small block to the right of the modules you want to do.  
**NB: You will not be able to select the final module of a course (Inspection courses) until you have booked/completed all the other modules.**
5. You will be prompted to select the person responsible for payment (Company details required for company payments).
6. You will be required to submit your documents (application form, ID, and required access conditions).
7. After submitting your documents, select save and continue.
8. The request for booking will be sent to the SAIW administration offices.
9. Once accepted by the administration offices you will receive a quote via email.

## MAKING A PAYMENT

1. Once you are ready to make payment (minimum of 5 working days before the course start date), you can log onto your profile and click on the pink icon (Course Payment).
2. You can then select your payment type & upload the proof of payment.
3. Once the SAIW accounts department has verified your payment, the system will generate a booking confirmation, which will be sent to you via e-mail. Required on day course commences.
4. **Note that payments received less than 5 working days prior to a course may mean that you are not guaranteed a place.**

## PAYMENT METHODS

1. EFT
2. Bank Deposit
3. Credit Card
4. PayFast
5. MobiCred

# BOOKING PROCEDURE

- Please ensure that you comply with the course access conditions prior to enrolling for the course
- Refer to the access conditions throughout the prospectus
- Further information is available on the SAIW website: [www.saiw.co.za](http://www.saiw.co.za)
- Full payment is to be made prior to the commencement of the course and exam
- All prices indicate the combined total for both the training and initial qualification examination costs

Please contact SAIW at [elizabeth.shole@saiw.co.za](mailto:elizabeth.shole@saiw.co.za) should you experience any difficulty with the self-help online registration.

**ALL PRICES QUOTED  
INCLUDE VAT**

## PLEASE NOTE THAT:

Once we have received all correct documents and payment has been confirmed, you will receive, via email, a "Booking Confirmation Notice". This booking confirmation notice will include the date of the course, venue and full address.

Please bring your booking confirmation on the first day of your course.

Your place on the course is not guaranteed unless you have this "Booking Confirmation Notice".

## DOCUMENTATION REQUIRED FOR COURSE ENROLMENT:

1. "Course Enrolment Application Form" – completed in full.
2. Confirmation of full payment.
3. Legible copy of highest academic qualifications (school, college, university, etc.) and / or pass mark in proficiency test (>70%).
4. Legible copy of ID or Passport.
5. Confirmation of the preceding Level qualification (training record and examination result letter) is required, if applicable.
6. CV (only IIW courses).

## WHAT YOU NEED TO BRING ALONG:

1. Copy of your ID or Passport.
2. Stationery, e.g. pen, pencil, note book, eraser and highlighter and scientific calculator.
3. Copy of the booking confirmation letter.
4. A 100% attendance of the course is mandatory.
5. 1 Colour ID photo (only for NDT courses).

## CANCELLATION OF TRAINING

1. The SAIW reserves the right to cancel the holding of a course at short notice, should student numbers not meet our minimum course requirements. Candidates shall be informed of the cancellation two weeks prior to the training start date and arrangements will be made to book the candidate on the next available course. Should the student/applicant decide the alternative arrangement is unsuitable, the full course fees will be reimbursed in these circumstances. Personal costs relating to accommodation and travelling cannot be claimed.
2. If the course booking is cancelled by the applicant prior to the training start date, a cancellation charge of 4% (plus VAT) of the course fees will be charged by the SAIW as an administration fee and the balance of the fees refunded to the applicant. In these circumstances only the balance of the course fees will be reimbursed and no personal costs relating to accommodation and travelling may be claimed by the applicant.

# ALL RE-WRITE EXAMINATIONS

# Booking Procedures

Full payment  
is to be made prior to  
the commencement of  
the examination.  
All prices quoted  
include VAT.

## Application Process

All documentation related to re-write examinations should be directed to the Examination & Qualification coordinator in the SAIW Certification Examination Department via email at [theresia.vanzyl@saiw.co.za](mailto:theresia.vanzyl@saiw.co.za) or by phone at 011 298 2130. The following documents are required:

- The "Examination Application Form" must be completed in its entirety. Special attention must be given to ensuring accurate signatures and providing a valid email address. Candidates attending the training course are required to complete this form on the first day of the course.
- A confirmation of full payment is mandatory for exam registration.
- For NDT Examinations, candidates must obtain a valid vision acuity certificate from a qualified optometrist within six months of the exam date.
- A legible copy of the candidate's ID or Passport is required for verification purposes.

**We appreciate your co-operation and understanding of these policies. If you have any further inquiries or concerns, please do not hesitate to contact the Examination Department.**

## WHAT YOU NEED TO BRING ALONG:

1. Copy of your ID or Passport.
2. Stationery, e.g. pen, pencil, note book, erasure and highlighter and scientific calculator.
3. Confirmation notice.

## DRESS CODE

### NDT:

Wear long pants, shirt and safety boots.

### ANY OTHER COURSE:

Long pants, shirt and closed shoes.



# CANCELLATION OF RE-WRITE EXAMINATION Policy

If the minimum required number of students is not met, SAIW Certification retains the right to cancel a scheduled re-write exam on short notice.

Candidates will be duly informed of this cancellation at least two weeks prior to the re-write exam date. Alternate arrangements will be made to accommodate affected candidates in the next available re-write exam. Should the proposed alternative not be suitable for the student/applicant, a full reimbursement of the re-write exam fee will be issued.

**Please note  
that personal  
expenses such as  
accommodation and  
travel costs cannot  
be claimed.**

## **Less than 15 Days' Notice**

If a candidate cancels their re-write exam booking less than 15 (fifteen) days prior to the exam date, a cancellation charge, equivalent to 10% of the full re-write exam cost, will be applicable.

## **15 Days or More Notice**

If a candidate cancels their re-write exam booking 15 (fifteen) days or more prior to the exam date, a 4% administration fee (plus VAT) based on the re-write exam fee will be charged. The remaining balance of the fee will be refunded to the applicant. It is important to note that only the balance of the re-write exam fee will be reimbursed; personal expenses related to accommodation and travel cannot be claimed.

## **Non attendance due to medical or work reasons**

If an examination cannot be attended due to medical reasons or work reasons, a doctors' sick note or a letter from the work supervisor, respectively, needs to be provided. In this case a postponement will be accepted with no cancellation charges applied.





# RE-WRITE Examinations

## JOHANNESBURG, DURBAN AND CAPE TOWN

Please note that the re-write examination schedule could be revised in line with the training schedule - please refer to the SAIW website for the latest version as well as related information.

### PRICING (Including VAT)

Revision	R 2,700 per day
Welding Coordinator	R 1,000 per paper
Introduction to Welding Inspection	R400 per paper
SAIW Welding Fabrication Inspector Level 1 and Level 2	R1 000 per paper
Competent Persons – SG	R1 000 per paper
Competent Persons – PV	R400 per paper
Miscellaneous Welding Re-writes	R1 000 per paper
International Welder	R400 per paper

### CUT-OFF DATE FOR REWRITE BOOKINGS

2 weeks prior to exam date

JOHANNESBURG				
	Cut off date for re-write bookings	Welding Quality Control, IWIP-B & Welding Inspection Fabrication Level 1	Welding Inspection Fabrication Level 2	All Other Courses
RW 1	7 Feb	24 - 25 Feb	26 - 27 Feb	28 Feb
RW 2	28 Mar	14 - 15 Apr	16 - 17 Apr	18 Apr
RW 3	16 May	02 - 03 Jun	04 - 05 Jun	06 Jun
RW 4	04 Jul	21 - 22 Jul	23 - 24 Jul	25 Jul
RW 5	22 Aug	08 - 09 Sep	10 - 11 Sep	12 Sep
RW 6	07 Nov	24 - 25 Nov	26 - 27 Nov	28 Nov

DURBAN & CAPE TOWN		
	Cut off date for re-write bookings	All Courses
RW 1	07 Feb	24 - 25 Feb
RW 2	28 Mar	14 - 15 Apr
RW 3	16 May	02 - 03 Jun
RW 4	04 Jul	21 - 22 Jul
RW 5	22 Aug	08 - 09 Sep
RW 6	07 Nov	24 - 25 Nov

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Please refer to contacts on page 26

# NDT RE-WRITE Examinations

## JOHANNESBURG, DURBAN AND CAPE TOWN

### PRICING (Including VAT)

Re-write per paper **OR** per sample **OR**  
written instruction **OR** 12 Radiographic Film Sets **R1 000**  
\*Revision classes **R 2,700 per day**

*\*As per scheduled course and subject to available space*

### NDT Rewrite dates

Book for rewrite on the first day of the week – additional days allows for extra time for practical.

### CUT-OFF DATE FOR REWRITE BOOKINGS 1 week prior to exam date

JOHANNESBURG					
	Cut off date for re-write bookings	All Courses		Cut off date for re-write bookings	All Courses
RW 1	14 Feb	25 - 28 Feb	RW 6	18 Jul	29 Jul - 01 Aug
RW 2	14 Mar	25 - 28 Mar	RW 7	15 Aug	26 - 29 Aug
RW 3	11 Apr	22 - 25 Apr	RW 8	19 Sep	30 Sep - 03 Oct
RW 4	16 May	27 - 30 May	RW 9	14 Nov	25 - 28 Nov
RW 5	13 Jun	24 - 27 Jun			

*\*\*Remainder of weeks are available for completion of examination*

[www.saiw.co.za](http://www.saiw.co.za)

Please refer to contacts on page 26

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# Code of Conduct

## FOR STUDENTS ATTENDING SAIW TRAINING PROGRAMMES AND EXAMINATIONS

**STUDENTS ARE REQUIRED TO EXHIBIT GOOD BEHAVIOUR WITHIN THE SAIW CAMPUS AND RELATED VENUES**

- 1** All students and staff members must be treated with respect.
- 2** Students are required to comply with any reasonable instruction given by a SAIW staff member.
- 3** Threatening or disruptive behaviour, harassment or other similar poor behaviour is unacceptable.
- 4** Shouting, swearing or offensive language is unacceptable.
- 5** Dishonesty or cheating in training tests or examinations are not tolerated.
- 6** At least 90% attendance is mandatory.

Please refer to the website [www.saiw.co.za](http://www.saiw.co.za) for a full version of our Code of Conduct and Policies.

Students are reminded that firearms and/or other dangerous weapons are not permitted within the SAIW campus.

### DRESS CODE

#### PRACTICAL WELDING:

Safety clothes (safety boots, full overalls with long sleeves, gloves and helmet)

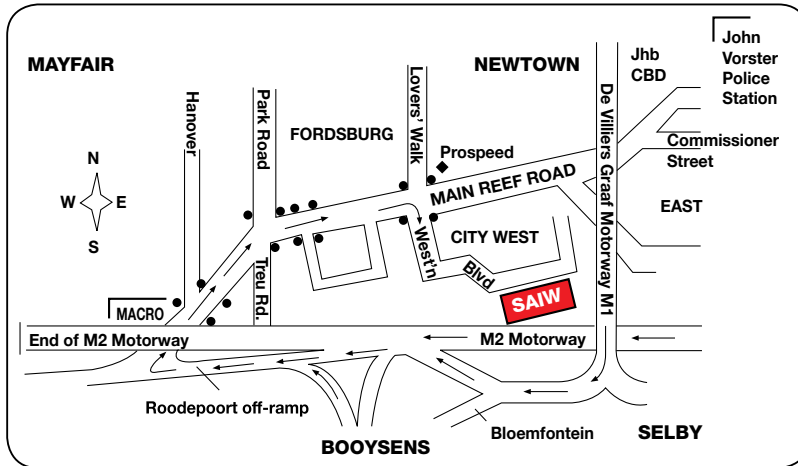
#### ANY OTHER COURSE:

Long pants, shirt and closed shoes

### Conditions of entering SAIW

- The SAIW reserve the right to search any person at any time and to inspect any containers, vehicles, etc. taken into or out of the SAIW premises
- No intoxicated person is permitted to enter the SAIW premises
- No explosives or firearms or other dangerous weapons are permitted on the premises

# Contact Details and Directions



## JOHANNESBURG (HEAD OFFICE)

### GPS co-ordinates:

26°12'39.6"S 28°01'35.8"E

Southern African Institute of Welding  
52 Western Boulevard, off Main Reef Road  
City West, Johannesburg  
P O Box 527, Crown Mines, 2025

**Tel: +27 (0)11 298 2100**

## CAPE TOWN, SECUNDA AND MIDDELBURG

The venue for courses in will be announced on confirmation of course.

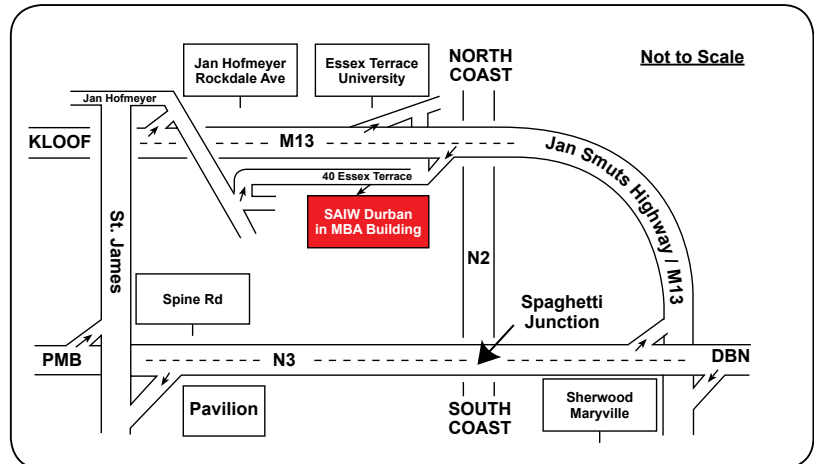
## DURBAN

### GPS co-ordinates:

29°49'49.8"S 30°57'03.6"E

40 Essex Terrace, Westville, 3629  
P O Box 527, Crown Mines, 2025

**Tel: +27 (0)11 298 2100**





# **BOOKINGS & QUERIES** **Contact Details**

## **TRAINING**

training@saiw.co.za

## **PRACTICAL WELDING**

welding@saiw.co.za

## **EXAMINATIONS**

exams@saiw.co.za

## **QUALIFICATION & CERTIFICATION**

qualcert@saiw.co.za

## **COMPANY AUDITS**

iso3834@saiw.co.za

## **TECHNICAL SERVICES**

technical@saiw.co.za

## **LABORATORY TESTING**

mat.lab@saiw.co.za

## **PAYMENTS / ACCOUNT**

debtors@saiw.co.za

## **INVOICING**

invoicing@saiw.co.za

## **FEEDBACK**

info@saiw.co.za

## **COMPLAINTS / COMPLIMENTS**

quality@saiw.co.za

## **APPEALS**

quality@saiw.co.za

## **QUALITY**

quality@saiw.co.za

## **FORMAL INTERACTION**

info@saiw.co.za

## **CREDITORS**

creditor@saiw.co.za

## **MANAGEMENT**

## **FINANCE & ADMINISTRATION**

tebello.motsoene@saiw.co.za

## **TRAINING**

confidence.lekoane@saiw.co.za

## **PRACTICAL WELDING**

confidence.lekoane@saiw.co.za

## **TECHNICAL SERVICES**

confidence.lekoane@saiw.co.za

## **COMPANY AUDIT & CERTIFICATION**

shelton.zichawo@saiw.co.za

## **PERSONNEL EXAMINATIONS**

shelton.zichawo@saiw.co.za

## **PERSONNEL QUALIFICATION / CERTIFICATION**

shelton.zichawo@saiw.co.za

## **APPROVED TRAINING BODIES**

shelton.zichawo@saiw.co.za

## **EXECUTIVE DIRECTOR**

vicus.burger@saiw.co.za



# Banking Details

**For courses, examinations and re-write examinations**

**Account Name:** Southern African Institute of Welding NPC  
**Bank:** First National Bank  
**Branch:** Hyde Park  
**Branch Number:** 255 805  
**Account Number:** 505 236 54470

**Reference No.:**

Quotation number / Invoice Number / Student number / Customer number

**Credit Card facilities available at the SAIW offices**



**Comments,  
Compliments or  
Complaints**

Please note: Any comments, compliments or complaints related to:

1. Training can be forwarded to **quality@saiw.co.za**
2. Examination and Certification can be forwarded to **quality@saiw.co.za**
3. Course applications can be forwarded to **elizabeth.shole@saiw.co.za**

# BECOME AN SAIW Member

Membership Benefits apply to members in good standing.

## PRICING (Including VAT)

Corporate

R 7 580

Individuals

R 970



### VISION

To be the **preferred provider** of welding, NDT and related technology services to industry in Africa to enable economic growth through developing our **National Welding Capabilities**.



### MISSION

To deliver **the highest quality of customer service and technical excellence** in training, technical services and certification of companies and personnel.



### VALUE PROPOSITION

SAIW empowers members to **improve productivity and quality whilst reducing costs** in all welding related manufacturing activities through training and qualification; certification of companies and personnel; and technology transfer.



### PURPOSE STATEMENT

The SAIW is dedicated to the implementation of standards and training in welding fabrication and related technologies to ensure the **reliability and integrity of welded equipment** for the safety of personnel and plant.

## Training

- 7.5% discount on training courses for corporate members
- 7.5% discount on revision and rewrite examinations for corporate members

## Certification

- 5% discount on company certifications
- 5% discount on personnel certifications
- Free remote CPD accumulation for SAQCC CP/IPE personnel
- Free initial audit for ATB application
- Free initial company certification marketing visit

## Technology

- Free telephonic consulting and code interpretation
- Free independent third party NDT report review
- 5% discount on technical services
- 5% discount on laboratory services
- 10% discount on annual Welding Seminar
- Free monthly cpd technical webinars
- Free access to SAIW library
- Free access to read-only standards
- 5% discount on gauges
- Exclusive access to industry trends, analysis and upcoming project leads

## Marketing and Membership

- Use of “Member of SAIW” logo and certificate
- Professional recognition “Member of SAIW”
- Eligible for AGM voting rights and board membership
- For corporate members, free personal membership for up to 10 employees
- 10% discount on advertising rate in African Fusion
- Free African Fusion subscription and free potential editorial in African Fusion
- 10% discount on rates for SAIW facilities
- Access to certified welders database for corporate members
- Access to free listing on SAIW certified welders database for individual members
- Free job adverts on website
- Access to regional SAIW Sports Days for sponsorship opportunities, entertaining customers and networking
- Access to Annual Dinner and associated sponsorship opportunities
- Awards winners marketing “bragging rights”





# **MATERIAL TESTING** **Laboratory**

## **SAIW has a material testing laboratory on site**

The facility is fully equipped to perform mechanical, metallurgical, and in-house non-destructive testing (NDT) on welds and metallic samples. Our material testing laboratory provides comprehensive testing and consulting services to various industries. These services include weld procedure qualification, welder qualification, welding consumable testing, failure analysis, welding-related research and development, and positive material identification.

[www.saiw.co.za](http://www.saiw.co.za)

Please refer to contacts on page 26

Scan to download the SAIW  
Course Prospectus App onto  
your cellular phone.



# MATERIAL TESTING Laboratory

Services	Equipment
<b>Mechanical testing</b>	
Tensile & Bend testing	MTS Criterion 64.305 (300 kN)
Charpy V notch impact testing	450 joule SANS Charpy impact test machine
Vickers Hardness Testing	emcoTEST Durascan 70 (10 grams to 10 kg load)
<b>Chemical Testing</b>	
Spectrophic Analysis	Bruker Q2 Ion spectrometer
X-Ray fluorescence analysis (XRF)	Bruker S1 Titan XRF analyser
<b>Metallurgical Testing</b>	
Non-Destructive Testing	
Microstructural Evaluation	Visual Examination
Macrostructural Evaluation	Radiographic Testing
	Liquid Penetrant Testing
	Magnetic Particle Testing

All equipment needed for  
test sample preparation is  
available in-house

The SAIW material testing laboratory, **laboratory number TO693**,  
is accredited by SANAS to comply with ISO 17025.

The SAIW material testing laboratory is managed by a team of  
qualified and experienced metallurgists.



For more information, please contact the administrator on  
mat.lab@saiw.co.za or on 011 298 2104



# MATERIAL TESTING Laboratory

Tests	Price
<b>Chemical Analysis</b>	
Spectrographic analysis (Fe base)	R 462
Spectrographic analysis (Al, Cu base)	R 520
<b>On-Site Material Analysis (XRF Analysis)</b>	
Call-out Fee (within Gauteng)	R 2 824
Per Material Analysis	R 114
<b>Tensile Test (Cutting, Machining and Testing)</b>	
< 25mm thick specimen	R 682
≥ 25mm thick specimen	R 863
<b>Bend Test (Cutting, Preparation and Testing)</b>	
≤ 10mm thick specimen	R 392
> 10mm thick specimen	R 483
<b>Nick Break Test / Fracture Test</b>	
≤ 10mm thick specimen	R 483
> 10mm thick specimen	R 483
<b>Impact Test (Machining, notching and testing per set of 3)</b>	
Room Temperature (>0°C)	R 785
≥ -100°C to ≤0°C	R 978
< -100°C	R 1 359
<b>Impact Test (Machining, notching and testing per set of 5) Consumable/Wire testing</b>	
Room Temperature (> 0°C)	R 1 308
≥ -100°C to ≤0°C	R 1 619
< -100°C	R 2 264
<b>Hardness Testing</b>	
Single Point (3 indents)	R 193
Weld Hardness Traverse (PM,HAZ,WM,HAZ,PM – 15 indents)	R 785
Macro with hi-resolution digital photograph	R 616
Micro- structural analysis	R 1 231
<b>Post Weld Heat Treatment</b>	
≤ 25mm thick specimen(1-6 hours at temp below 750°C)	R 748
> 25mm thick specimen(1-6 hours at temperature 750°C)	R 978
From 6 Hours (Per hour)	R 198

All prices above are exclusive of VAT. Prices may be revised without notice.

## NDT – Weld Test Pieces Only

Tests	Price
<b>Volumetric Testing - Radiography</b>	
Plate	
≤ 25mm thick specimen	<b>R 392</b>
> 25mm thick specimen	<b>R 471</b>
Pipe	
≤ 50mm diameter specimen	<b>R 483</b>
> 50mm diameter specimen	<b>R 682</b>
<b>Volumetric Testing - Ultrasonic Testing</b>	
Plate	
≤ 25mm thick specimen	<b>R 573</b>
> 25mm thick specimen	<b>R 573</b>
Pipe	
≤ 50mm diameter specimen	<b>R 700</b>
> 50mm diameter specimen	<b>R 869</b>
<b>Surface Testing – Liquid Penetrant</b>	<b>R 182</b>
<b>Surface Testing – Magnetic Particle Testing</b>	<b>R 182</b>
<b>Surface Testing – Visual Testing</b>	<b>R 182</b>

All prices above are exclusive of VAT. Prices may be revised without notice.

[www.saiw.co.za](http://www.saiw.co.za)

Please refer to contacts on page 26

Please contact us  
for a quotation for any  
other metallurgical work  
not detailed here

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Course Prospectus App onto  
your cellular phone.







# ABOUT Practical Welding

**At the Southern African Institute of Welding (SAIW), we take immense pride in offering a diverse range of hands-on training programs that empower individuals with the knowledge and expertise required to excel in welding. Our practical welding training covers a spectrum of specialised areas and caters to both beginners and experienced welders.**

[www.saiw.co.za](http://www.saiw.co.za)

Please refer to contacts on page 26

# ABOUT Practical Welding



## Welding Essentials

Welders play a crucial role in joining various metals using electric arc processes, utilising gas shields or flux to protect the molten weld area from contaminating drawings, adhere to standards, and understand the impact of welding on materials.



## Welding Processes

Our practical training encompasses popular welding processes, such as Shielded Metal Arc, Gas Metal Arc, Gas Tungsten Arc, Flux Cored Arc, Submerged Arc and Laser Beam Welding. We tailor programmes to individual needs.



## Applications

Welders fabricate structures, pressure vessels, and more. They select equipment, adjust variables, and employ cutting and grinding techniques to prepare joints.



## Training Options

Our training is flexible, offered week by week at SAIW or in-house, catering to upskilling and qualification needs. We also offer the International Institute of Welding's (IIW) International Welder (IW) qualification program and QCTO-approved welder apprenticeship training.



## IIW Welding Training Program

SAIW's IIW Welding Training Program aligns with international standards and addresses the need for highly skilled welders and to achieve global harmonisation in the training, examination and qualification testing of welders.



## IIW Fast Track Program

Experience an accelerated journey to an IIW Standard Diploma, ideal for experienced welders, who, depending on the welder, can achieve qualification in one to two weeks, including all training and assessment at a substantial cost savings.



## Robotic Welding

Stay ahead with our robotic welding training, enabling you to operate and program welding robots efficiently in industries embracing automation.

SAIW's experienced instructors foster a hands-on learning environment, whether you're pursuing welding as a career or enhancing your skills. We believe that practical welding proficiency is key to success in the welding industry. Join us to embark on a journey of skill development and professional growth in the exciting world of welding.

# Practical Welding

## Course Information

The SAIW is dedicated to providing world-class practical welder training benchmarked against international welding standards and international welder programmes. SAIW therefore strives to ensure that when a candidate exits any of our tailor-made programmes he/she can be assured of good prospects in securing employment with excellent financial rewards.

These highly sought-after courses can be developed to suit company or individual needs and are conducted at the SAIW practical welding school. They can also be offered in-house.

Practical welding courses are tailored to accommodate any welding skill level, from beginner to experienced. Training is thus designed to meet the needs of the individual taking into account the entry skill level and the desired end result. The pace of progress is determined through practical assessments and so the duration will vary from one person to the next.

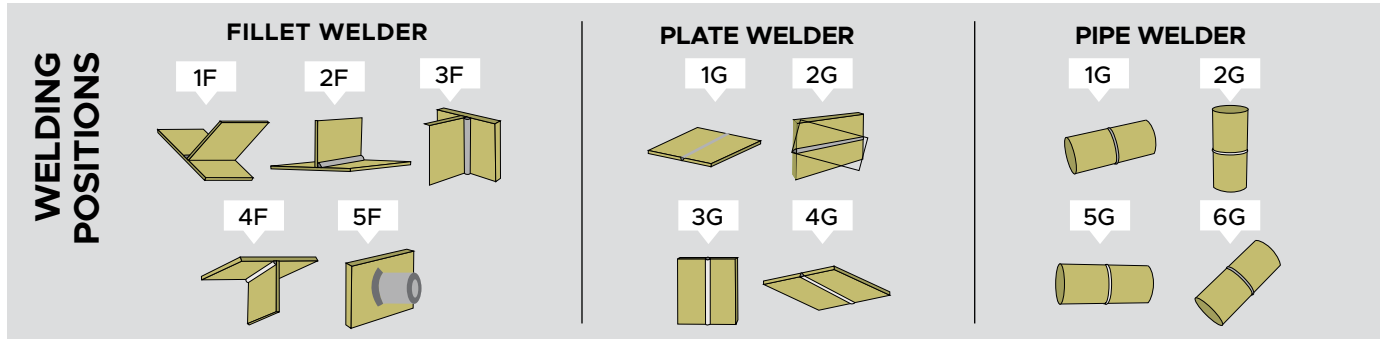
## Entry Requirements



- ✓ Good hand-eye coordination is the most important aspect to allow one to excel in welding
- ✓ Appropriate health as well as physical and mental capability is also required

# Practical Welding

Examples of the welding positions commonly used in welder training can be seen in the diagram below.



## Course Duration

Individuals seeking to learn how to weld or those wishing to acquire a new skill or upskill themselves can attend any Monday to Friday session, once a booking is confirmed.

## Assessment

Outcomes of training will depend on the individual's ability to successfully undertake a Welder Performance Certification test as mandated by the various construction standards i.e. ASME section IX and AWS D1.1 - 6.

## Course Schedule

The price of the course is **R 7 680** per week. (Including VAT)  
The above pricing includes certification testing (Coding) to the desired Construction Standard most applicable to the work. Should only a welder competency test be required, **R3 405** will be charged per welding process, per position, per material.

**A 25% surcharge is applied if the material is stainless steel or aluminium.**





An impressive  
eye for detail.  
Creative.  
Passionate.  
Wildlife  
Photographer.  
Mother.

# I am an International Welder.

We think of welding as a 'dirty' job, of loud factories and workshops, of noise, heat and risk. After all, it's merely a tradesman's job, right? Think again, being a **qualified International Welder** is a highly skilled career and your expert welding skills are one of the most internationally sought after, highly paid and essential trades.

Being an **International Welder** isn't just a trade, it's a craft, an art and a science and you'll be able to work in over 60 countries and do a lot more than simply fusing metals together.

You'll be **building a better world, a better life** for you and **the generations to come.**



## SAIW

Southern African Institute of Welding

Contact SAIW on (011)298 2100  
or visit [www.saiw.co.za](http://www.saiw.co.za)



# ABOUT IIW International Welder



## Course Information

The International Institute of Welding (IIW) has adopted the International Welder (IW) programme to address the need for highly skilled welders and to achieve global harmonisation in the training, examination and qualification testing of welders.

Training and assessment in the IW programme are linked to the requirements of the international standard, ISO 9606 qualification testing of welders. The ISO 9606 standard is widely used in South Africa, but it is important to note that it is similar to other standards, which are relevant in South Africa, eg. ASME IX and AWS D1.1.

The IW programme provides a combination of theoretical knowledge and high-level practical skills assessed by tests of increasing difficulty and by theoretical examinations.

The programme is presented at three levels – fillet,

plate, and pipe welder. Trainees are required to start with fillet welding and must pass a practical competency test before progressing to the next level. Training periods for practical welding vary from person to person.

Experienced welders are not required to undertake unnecessary practical training and may enter the IW programme at any level subject to completing the relevant level practical qualification test including those required for lower levels. A welder fully competent in fillet, plate and pipe welding would undertake the practical test for all three levels and would then undertake only the relevant theory components.

It is important that at each level there is an associated level of theory, plus there may be process specific and material specific theory modules which are applicable.



## Entry Requirements

- ✓ Good hand-eye coordination is the most important aspect to allow one to excel in welding
- ✓ Appropriate health as well as physical and mental capability is required to enter at Fillet Welder level
- ✓ Access to higher levels may be allowed upon passing of relevant theoretical examinations and demonstration of required practical skill





# FAST TRACK International Welder Qualifications FOR EXPERIENCED WELDERS

The SAIW has launched an exciting new streamlined international welder qualification via a fast tracked IIW Standard Diploma for experienced welders.

The introduction of the new format IIW Standard Diploma means that experienced welders can supercharge their training process over one to two weeks including all training, the assessment (examination) and materials at a cost of around **R18 000**, an **88% cost saving!**

## Why launch this type of training?

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.

## **FAST TRACK** **International Welder Qualifications** **FOR EXPERIENCED WELDERS**

### **Focused, fast and cost-effective**

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.

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

### **Course structure & criteria**

- 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 student receives an IIW Diploma and a Welding Certificate of record which provides unequivocal proof that the welder complies with the IIW standards.
- To access the course, a student must have been a full-time welder for at least two of the previous three years and possess a valid welder qualification certificate. They also need a CV with the endorsement from a current or previous employer to prove their experience.

### **Reasons to obtain the diploma**

#### **THE KEY BENEFITS OF OBTAINING THE IIW DIPLOMA ARE:**

- Qualification in an international level of welding will make students much more marketable and increase their job prospects locally and allow them to apply for jobs overseas.
- Springboard for more advanced careers in welding inspection and coordination. These jobs add much needed depth of experience on welding projects at ground level and are higher level skills.

### **FUTURE FOCUS**

The SAIW is committed to meeting the requirement from local industry for South African welders with internationally recognised qualifications who can add value to new and maintenance projects in the petrochemical, power generation and oil and gas industries, which will experience an investment boom.

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[www.saiw.co.za](http://www.saiw.co.za)

**Please refer to contacts on page 26**



# IIW INTERNATIONAL Welder

## PRICING –TYPICAL DURATIONS

The estimated time required for the various processes and levels is shown below, but this is dependent on the individual's aptitude.

Should the individual complete a process and level early credit will be given to contribute to the next level or process.

Process	SMAW (MMA) Stick Welding			GTAW (TIG) Argon Welding			GMAW (MAG) & FCAW CO2 & Flux Core		
Level	Weeks	Price	Price/ week/test	Weeks	Price	Price/ week/test	Weeks	Price	Price/ week/test
Fillet	10	R 59 980	R 5 998	8	R 49 830	R 6 228	14	R 83 540	R 5 967
Plate	10	R 61 450	R 6 145	6	R 39 250	R 6 542	10	R 62 490	R 6 249
Tube	6	R 40 400	R 6 733	4	R 28 720	R 7 180			
Tests	6 Test Pieces			5 Test Pieces			**4 or 8 Test Pieces		
Theory***	2	R 12 000	R 6 000	2	R 12 000	R 6 000	2	R 12 000	R 6 000
TOTAL	28	R173 830	R 6 208	20	R 129 800	R 6 490	26	R 158 030	R 6 078

\*Refer to page 47. The total theory training is two weeks for fillet, plate and pipe; for all processes and materials.

\*\*Depending on either process or both processes

\*\*\*International Harmonised Examination

### THE ABOVE PRICING INCLUDES

- ✓ Practical welding training
- ✓ Welder certification testing (coding)
- ✓ Theoretical training and examination fees
- ✓ IIW Diploma after successful completion of the course

### A 25% surcharge is applied if the material is stainless steel or aluminium.

Should only a welder competency test be required, **R3 405** will be charged per welding process, per position, per material.



## EXPLORE THE FUTURE OF WELDING EDUCATION WITH

# Virtual Reality

Welcome to the SAIW's Virtual Welder Welding Academy, where we are revolutionizing welding education through the integration of cutting-edge Virtual Reality (VR) technology. Our aim is to provide an unparalleled learning experience that is not only more cost-effective but also more immersive and effective than ever before.

### Immersive Welding Training

The Welding Academy of the Virtual Welder offers a world-class first solution for immersive welding training. We recognise that welding is a skill that demands both theoretical knowledge and hands-on expertise. That's why our academy combines progressive theoretical and practical modes with hands-on VR sessions to create a comprehensive learning experience.

### Four Levels of Mastery

At our VR Welding academy, students embark on a hands-on journey through four distinct levels, each escalating in complexity. These levels are designed to ensure that students build a solid foundation and progressively advance their skills, ultimately becoming proficient welders. With each level, students gain confidence and proficiency in both MIG/MAG and TIG welding techniques.

### Guidance and Assistance

To aid in the learning process, we provide an assist mode that is available throughout the training. This feature guides students through the intricacies of each level, ensuring they grasp essential techniques and principles. This way, students can learn at their own pace and have the support they need to succeed.

## EXPLORE THE FUTURE OF WELDING EDUCATION WITH

# Virtual Reality

### Shaping the Future of eLearning

Our VR Welder is at the forefront of shaping the future of eLearning. By integrating virtual reality into welding education, we are creating an engaging and dynamic learning environment that prepares students for the real-world challenges of welding. Approximately 50% of your learning time will be spent using our VR Welder, allowing you to gain practical experience and proficiency in a controlled, risk-free environment.

### Blend of VR and Welding School

We understand the importance of practical, hands-on experience in welding. That's why the remaining 50% of your learning time will be spent in our state-of-the-art Welding School. Here, you'll have the opportunity to apply your knowledge in real-world welding scenarios, under the guidance of experienced instructors.

### 30% Discount on IIW International Welder Programme

If you're interested in enrolling in our IIW International Welder programme using this blended approach, you will qualify for a 30% discount. This is an exclusive opportunity to receive world-class welding education at a reduced cost, making it more accessible to aspiring welders.

**SPECIAL  
OFFER**

Join us at the SAIW's Virtual Welder Welding Academy, where we are breaking new ground in welding education. Explore the future of welding training with us and embark on a journey toward becoming a skilled and proficient welder. Your future in welding starts here, with the power of virtual reality and hands-on experience. Enroll today and take the first step towards an exciting and rewarding career in welding.





# IIW INTERNATIONAL Welder

## Theory Modules and Welder Qualification Tests

The theory modules and welder qualification tests are included in the price of the International Welder qualification programme. However, an experienced welder may wish to become an International Welder through recognition of prior learning. In such a case, the theory modules and welder qualification tests can be taken separately to the practical training:

	Course Duration	Pricing (including VAT)
International Fillet Welder – Module A	4 days	<b>R 6 322</b>
International Plate Welder – Module B	3 days	<b>R 4 744</b>
International Pipe Welder – Module C	1 day	<b>R 1 583</b>
Process Specific – Modules SA, ST and SM	1 day	<b>R 1 583</b>
Material Specific – Modules PSS and PAL	1 day	<b>R 1 583</b>
Welder Qualification Tests		<b>R 3 405 each</b>

## COURSE SCHEDULE | IIW International Welder

### JOHANNESBURG

	JHB 01
Week 1	Upon request
Week 2	Upon request





# ABOUT Robotic Welding

Individuals wishing to do robotic arc welding must understand the various issues that will be encountered when moving from manual application methods. Therefore, it is important for the individual to understand what must be controlled and by whom to produce sound welds

The Robotic Welder training course is designed to give the candidate the necessary theoretical and practical knowledge on welding technology by equipping him/her with the skills to manage all aspects of a robotic welding operation including design and programming of the welding task, safety and troubleshooting of the welding operation.

The course also serves as a foundation to more advanced robotic welder training.

## SAIW – Robotic Welding

**JOHANNESBURG**

\*ON REQUEST



# Robotic Welding

## Course Information

### Access Conditions

You should be a holder of a valid Code Certification as a Gas Metal Arc Welder (GMAW) in the 1F and 1G welding positions respectively to gain access to the course. Should you not meet these requirements you need to attend a one-week practical welding course enabling you to weld a Fillet and Plate in the 1F and 1G positions.

**Course duration:** 5 days

### PRICING (Including VAT)

Practical welding (if required)  
Corporate Member  
Non-Corporate Member

**R 7 400**  
**R 16 600**  
**R 17 900**

## COURSE CONTENT

Safety  
around a  
robot

1

Welding  
procedures

2

Operating  
the pendant

3

Linear  
motion  
programming

4

Circular  
motion  
programming

5

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Please refer to contacts on page 26

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# INTRODUCTION TO Laser Welding

## Course Information

The Introduction to Laser Welding course is designed to provide a comprehensive introduction to laser welding technology, focusing on the fundamentals, applications, and hands-on practical training.

Candidates will engage with both theoretical and practical elements of laser welding, equipping them with the necessary skills and knowledge to effectively utilise laser welding in various equipment settings.

Participants will leave the course with a solid foundation in laser welding, equipped with the skills necessary to apply this advanced technology effectively in their respective fields.

## Entry Requirements

- ✓ Good hand-eye coordination
- ✓ Basic understanding of welding principles is beneficial but not mandatory



[www.saiw.co.za](http://www.saiw.co.za)

Please refer to contacts on page 26

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Course Prospectus App onto  
your cellular phone.







# INTRODUCTION TO Laser Welding

**Course duration:** 3 days

**PRICING (Including VAT)**  
**R 4,680**

- The above pricing includes theory, practical and certification testing (coding)
- 25% surcharge is applied if the material is stainless steel or aluminum

## Course Outcomes

By the end of this course, candidates will be able to:

- Understand the fundamental principles of laser welding technology
- Identify different welding processes and their applications
- Safely operate laser welding equipment
- Recognise various materials and their properties in relation to laser welding
- Adjust process parameters for optimal welding results
- Perform hands-on practical laser welding techniques

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# ABOUT Welding Coordinators

**Welding coordinators are integral people in the field of welding, playing pivotal roles in ensuring the quality, safety, and efficiency of welding operations. These professionals are essential for organisations and projects of all sizes, as they oversee and manage various aspects of welding activities. At the Southern African Institute of Welding (SAIW), we recognise the significance of these roles and offer specialised training programmes to equip individuals with the knowledge and skills necessary for their success.**

Welding coordinators are responsible for orchestrating and managing welding operations at a higher level. They ensure that welding activities adhere to international standards and codes, coordinate multiple projects or departments, and oversee the certification of welders and welding procedures. Through SAIW's courses, such as those aligned with the International Institute of Welding's (IIW) qualifications, individuals can become proficient Practitioners (IWP), Specialists (IWS), or Technologists (IWT), depending on their career goals and the scope of their responsibilities. These qualifications provide a structured pathway for welding professionals to advance their careers and make significant contributions to their organisations.

By choosing SAIW as your training partner, you gain access to a wealth of expertise and resources in the field of welding coordination. Our programmes are designed to meet the industry's evolving demands. Our experienced instructors are committed to providing comprehensive training that aligns with international best practices.

Join us at SAIW and embark on a journey to become a respected and capable leader in the world of welding coordination. Your skills and expertise will contribute to the safety and excellence of welding operations across various industries.

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# ABOUT Welding Coordinators

## International Welding Practitioner (IWP)

An International Welding Practitioner (IWP) is typically an individual responsible for ensuring that welding operations are carried out safely, efficiently, and in compliance with international welding standards and codes.

IWPs are trained to understand and apply welding processes, welding procedures, and quality control measures.

They play a key role in supervising welding activities and ensuring that welders adhere to established welding procedures and safety guidelines.

IWPs can also be involved in coordinating welding activities within their organisations or projects, although their focus is primarily on the practical aspects of welding.

## International Welding Specialist (IWS)

An International Welding Specialist (IWS) is a more advanced role that involves a deeper understanding of welding technologies, materials, and quality control.

IWSs are often responsible for overseeing welding operations, conducting weld inspections, and ensuring compliance with

welding standards and specifications.

They may take on leadership roles in managing welding teams, developing welding procedures, and addressing complex welding-related challenges.

IWSs have a comprehensive knowledge of welding processes, materials, and advanced welding techniques.

## International Welding Technologist (IWT)

An International Welding Technologist (IWT) is a high-level welding professional who possesses advanced technical knowledge and expertise.

IWTs are often responsible for managing and coordinating welding activities on a larger scale, such as within a company or on major projects.

They play a crucial role in developing and implementing welding procedures, conducting research and development related to welding, and ensuring that welding processes meet specific performance criteria and industry standards.

IWTs may also be involved in training and certifying welders and welding personnel.

## Career Progression

The IIW's IWP, IWS, and IWT courses provide a structured pathway for individuals to acquire the knowledge and skills needed to excel in welding coordination roles. These courses offer a progressive curriculum, allowing students to advance from

the practitioner level (IWP) to specialist (IWS) and technologist (IWT) levels, depending on their career aspirations and responsibilities. These qualifications can lead to career growth and increased expertise in welding coordination within the welding industry.

# International Welding Practitioner (IWP)



## Course Information



### Entry Requirements



A valid welder qualification certificate to weld in all positions without backing in at least one process, e.g. 6G (H-L045) pipe weld without backing, or horizontal and vertical groove weld without backing.

**Supporting document:** Valid welder qualification record (proof of welding within the past 6month) in any welding process and material in 6g pipe or plate 4g and 3g welding without backing except aluminium where backing is allowed.



#### OR

National welder qualification: eg QCTO welder or Red Seal Welder certificate or equivalent within the same qualification ranges as No 1.

**Supporting documents:** Welder trade certificate.



#### AND

The recommended minimum age of 20 years including 2 years working experience as plate or pipe welder.

**Supporting documents:** CV / reference letter from current or previous employer.

**Course Outline:** This course has both a theoretical and a class practical component and covers:

- Welding processes and equipment.
- Materials and their behaviour during welding, construction and design.
- Fabrication applications engineering.
- Welder qualification tests will be conducted on completion of the theory and practical training in the 6G positions and PF plate positions, in a choice of processes or materials.

Practical Welder training is carried out on an individual basis with the main processes being MMA, MIG/MAG, FCAW, TIG and Oxy-Fuel welding. Forty (40) hours are reserved to broaden the student's knowledge and skill in other relevant materials within this main process. An additional twenty (20) hours shall be reserved to give the student basic understanding of the possibilities of other processes.

### On completion of the course, students will have an understanding of:

- ✓ The characteristics and main components of the most common arc welding power sources
- ✓ The fundamentals of common and special welding processes and their applications
- ✓ Consumables used in the different processes
- ✓ Joint designs and weld configurations for specific materials, thicknesses, accessibility, different loadings and allowable tolerances
- ✓ Basic metallurgy of steels, testing of materials and heat treatments
- ✓ Defects encountered with the various welding processes
- ✓ And more – see dedicated course brochure for additional details



# International Welding Practitioner (IWP)

## The Course Is Intended For

Welders who wish to improve their welding skills and knowledge to enable them to take on welding supervision tasks and positions.

**Course duration:** Practical 7 days  
Theory 9 days  
Exams 2 hours

## PRICING (Including VAT)

	Theory Only	Practical Only	Combined
Corporate Member	<b>R 15,200</b>	<b>R 10,750</b>	<b>R 25,950</b>
Non-Corporate Member	<b>R 16,500</b>	<b>R 10,750</b>	<b>R 27,250</b>

## Course Schedule | International Welding Practitioner (IWP)

### JOHANNESBURG

WEEK	COURSE INFORMATION	HRS	JHB 01	JHB 02
1	Welding Processes and Equipment	29	03 - 06 Feb	29 Sep - 02 Oct
	Materials and their Behaviour During Welding	23	07 - 10 Feb	03 - 06 Oct
2	Construction and Design	6	11 Feb	07 Oct
	Fabrication, Application and Engineering	28	12 - 13 Feb	08 - 09 Oct
	Examination - Practical Training*		14 Feb	10 Oct
	Examination - Welding Processes and Equipment	1		
	Examination - Materials and their Behaviour During Welding	1		
	Examination - Construction and Design	1		
	Examination - Fabrication, Application and Engineering	1		

\* Practical training must be done in the same calendar year in which the theory was completed.

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# International Welding Specialist (IWS)



## Course Information



### Entry Requirements

- ✓ The recommended minimum age is 20 years
  - ✓ A senior certificate (matric, N3) AND a minimum of 2 years of job related experience is required
- OR**
- ✓ Hold a General Education and Training Certificate (GETC – Grade 9) plus 5 years relevant metal working experience

Candidates not meeting the above educational requirements will still be able to access the course through artisan qualification and experience. Contact the SAIW for more information.

## Course Outline

### PRACTICAL

- The practical training component of the course is not intended to bring the skill of trainees to a specific competency level but is aimed at ensuring they are exposed to a number of different processes and are familiar with the reasons for typical defects arising during welding
- Exemption is possible from the practical training module subject to a suitable CV showing experience with welding processes and is at the discretion of the Approved Training Body

### THEORY

- Welding Processes and Equipment
- Materials and their behaviour during welding
- Construction and Design
- Fabrications, Applications Engineering





# International Welding Specialist (IWS)

## The Course Is Intended For

Welding supervisors and coordinators and for personnel involved in training and technical sales.

**Course duration:** Practical 7 days  
Theory 27 days  
Exams 8 hours

## PRICING (Including VAT)

	Theory Only	Practical Only	Combined
Corporate Member	<b>R 51,600</b>	<b>R 10,750</b>	<b>R 62,350</b>
Non-Corporate Member	<b>R 55,700</b>	<b>R 10,750</b>	<b>R 66,450</b>

## Course Schedule | International Welding Specialist (IWS)

### JOHANNESBURG

WEEK	COURSE INFORMATION	HRS	JHB 01
	Practical Welding*	56	
1	Welding Processes and Equipment	48	07 - 14 Jul
2	Materials and their Behaviour During Welding	56	18 - 27 Aug
3	Construction and Design	24	15 - 18 Sep
4	Fabrication, Application and Engineering	54	13 - 22 Oct
	Examination - Welding Processes and Equipment	2	18 Aug
	Examination - Materials and their Behaviour During Welding	2	15 Sep
	Examination - Construction and Design	2	13 Oct
	Examination - Fabrication, Application and Engineering - Open Book	1,5	17 Nov
	Examination - Fabrication, Application and Engineering - Closed Book	2	

\* Practical training can be done at alternative dates provided the practical is completed in the calendar year in which the theory was completed. No practical exam is taken.

# International Welding Technologist (IWT)



## Course Information



### Entry Requirements

- ✓ National diploma in Engineering from a Technical University (Technikon) **OR**
- ✓ Higher level Engineering qualification **OR**
- ✓ IWS diploma with 6 years work experience as a Welding Coordinator at an appropriate level within 8 years after receiving the IWS diploma **OR**
- ✓ N6 Mechanical Engineering with 5 years welding experience on Technologist level in the last 10 years

### Course Outline

#### PRACTICAL

- The practical training component of the course is not intended to bring the skill of trainees to a specific competency level but is aimed at ensuring they are exposed to a number of different processes and are familiar with the reasons for typical defects arising during welding
- Exemption is possible from the practical training module subject to a suitable CV showing experience with welding processes and is at the discretion of the Approved Training Body

#### THEORY

- Welding Processes and Equipment including advanced welding processes
- Materials and their behavior during welding including advanced materials
- Construction and Design of welded fabrications
- Fabrications, Applications Engineering covering welding standards & their use

The International Welding Technologist (IWT) course is aimed at equipping personnel with the necessary skills and technical knowledge for the planning, executing, supervising and testing of the tasks and responsibilities in welding fabrication.

Engineering personnel intending to pursue a career in welding fabrication should apply for this course. It is suitable for engineers working on site and in fabrication

workshops, in manufacturing, EPCM companies and end users. The qualification is referenced as suitable for employees with welding coordination responsibilities in ISO 3834 and ISO 14731 standards addressing welding.

It is also an excellent qualification for Welding Coordination Personnel with the responsibility for confirming the acceptability of welding procedures used in welded fabrications.



# International Welding Technologist (IWT)

## The Course Is Intended For

Engineering personnel with a National diploma in engineering or an equivalent qualification, intending to pursue a career in welding fabrication and for engineers working in site and workshop fabrication.

<b>Course duration:</b>	Practical	7 days
	Theory	37 days
	Exams	16 hours

## PRICING (Including VAT)

	Theory Only	Practical Only	Combined
Corporate Member	<b>R 66,700</b>	<b>R 10,750</b>	<b>R 77,450</b>
Non-Corporate Member	<b>R 72,100</b>	<b>R 10,750</b>	<b>R 82,850</b>

## PLEASE NOTE:

The practical component aims to provide a candidate with knowledge on the control of the different welding processes.

The candidate will become familiar with the problems and typical defects associated with incorrect use of the different welding methods.

Exemption is available from the practical training module on application with a suitable CV showing experience with all the welding processes, subject to the discretion of the Approved Training Body.

## Course Schedule | International Welding Technologist (IWT)

### JOHANNESBURG

WEEK	COURSE INFORMATION	HRS	JHB 01
	Practical Welding*	60	
1	Welding Processes and Equipment	81	28 Jul - 08 Aug
2	Materials and their Behaviour During Welding	96	25 Aug - 08 Sep
3	Construction and Design	44	29 Sep - 03 Oct
4	Fabrication, Application and Engineering	81	27 Oct - 10 Nov
	Examination - Welding Processes and Equipment	3	25 Aug
	Examination - Materials and their Behaviour During Welding	3	29 Sep
	Examination - Construction and Design	3	27 Oct
	Examination - Fabrication, Application and Engineering - Open Book	2	24 Nov
	Examination - Fabrication, Application and Engineering - Closed Book	2,5	

\* Practical training can be done at alternative dates provided the practical is completed in the calendar year in which the theory was completed. No practical exam is taken.

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# ABOUT Welding Inspectors

Welding inspectors are the guardians of quality and safety in the welding industry. Their role is pivotal in ensuring that welds meet stringent standards, codes, and specifications, ultimately guaranteeing the integrity of welded structures and components.

At the SAIW, we recognise the critical importance of welding inspectors and offer comprehensive training programmes that empower individuals to become qualified Welding and Fabrication Inspectors at both Level 1 and Level 2.



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# ABOUT Welding Inspectors

## Level 1 and Level 2 Certification

Our Welding and Fabrication Inspector courses are designed to provide in-depth knowledge and hands-on training to individuals aspiring to become proficient inspectors. These programmes cover a wide range of topics, including welding processes, codes and standards, defect identification, inspection techniques, and quality control. Upon successful completion of these courses, individuals can earn internationally recognised certifications, making them well-prepared to take on the responsibilities of welding inspection roles in various industries.

**IWIP-B + ASME + D1.1 = Welding and Fabrication Inspector Level 1**

## IIW IWIP Basic and Standard

SAIW's commitment to excellence extends to incorporating the International Institute of Welding's (IIW) International Welding Inspection Personnel (IWIP) Basic and Standard qualifications into our Welding and Fabrication Inspector courses. This means that our students not only receive industry-leading training, but also gain access to globally recognised qualifications. The IIW IWIP certifications open doors to international opportunities, as they are widely respected and sought after by employers and organisations worldwide.

**Welding and Fabrication Inspector Level 1 + Oral = IWIP-B**

**Welding and Fabrication Inspector Level 2 + Oral + 2 Years Experience = IWIP-S**

## SAQCC Competent Persons (CP) and Inspector of Pressure Equipment (IPE)

In addition to IIW certifications, SAIW offers training and preparation for the South African Qualification & Certification Committee (SAQCC) Competent Persons (CP) and Inspector of Pressure Equipment (IPE) certifications. These credentials are crucial for individuals seeking to specialise in the inspection of pressure equipment and demonstrate their competence in ensuring the safe operation of pressure vessels, boilers, and related equipment. These certifications are highly regarded within South Africa's industrial landscape.





# **ABOUT** Welding Inspectors

## **Your Career**

By choosing SAIW for your welding inspection training, you embark on a path to becoming a skilled and internationally recognised welding inspector. Your role will involve conducting critical inspections, ensuring compliance with industry standards, and contributing to the safety and quality of welding projects. Welding inspectors are in high demand globally, and our programmes are designed to equip you with the knowledge and skills needed to excel in this rewarding and vital profession. With experience, you can develop a solid technical base, which then allows you to move into other areas such as production management, quality assurance and control, risk management, third party inspection, and technical management.

**Enrol in an SAIW course and invest in your future as a welding inspector. Your qualification will not only be a testament to your expertise but also a passport to a world of opportunities in the welding industry, both nationally and internationally.**

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# INTRODUCTION TO Welding Inspection

## A key step to becoming a Qualified Welding Inspector

The SAIW's INTRODUCTION TO WELDING INSPECTION COURSE gives candidates with no industry experience (or who do not meet the entry requirements to the SAIW Welding and Fabrication Inspector Level 1 i.e. Matric with 50% in Maths and Science), the ability to quickly familiarise themselves with welding quality control.

### THE COURSE PROVIDES TRAINING ON:

1	An introduction to welding terminology
2	Description of common welding processes
3	Material science
4	Inspection techniques and defects
5	Welding and fabrication codes
6	Quality control documentation
7	Basic mathematics and science

**R12 500**

**DISCOUNT**

**GET ALL YOUR MONEY BACK!**

**SEE PAGE 63**

**The good news is mastering these skills  
will serve as a gateway to a career in  
Welding Quality Control and Inspection.**

**BONUS**

Completing this training will fast track your Welding Inspection learning curve and boost your ability to pass the SAIW Welding and Fabrication Inspector Level 1 course!





# INTRODUCTION TO Welding Inspection

## Course Information



### Entry Requirements

✓ None

## Course Outline

- Quality control, welding codes and standards, welding terminology
- Overview of Mathematics, Science, Engineering and Material for Welding Technology

### PLEASE NOTE:

A 60% minimum is required in  
all end-of-course examinations

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# INTRODUCTION TO Welding Inspection

**The Course Is intended to** prepare you for the SAIW Welding and Fabrication Inspector Level 1 course. We are so confident about this that if you fail your SAIW Inspector Level 1 course, we will give you the first rewrite for free!

**Course duration:** 10 days

**PRICING (Including VAT)**

Corporate Member **R 10,400**

Non-Corporate Member **R 11,300**

In addition, **IF YOU PASS THIS COURSE, YOU WILL GET THE FULL PRICE OF THIS COURSE, AS A DISCOUNT, OFF YOUR SAIW LEVEL 1 COURSE** if you take up this offer within 12 months of completing this course.

## Course Schedule | Introduction to Welding Inspection

### JOHANNESBURG

WEEK	COURSE INFORMATION	HRS	JHB 01	JHB 02	JHB 03	JHB 04
1	Introduction to Welding Processes	40	27 - 31 Jan	19 - 23 May	21 - 25 Jul	27 - 31 Oct
	Metallurgy					
2	Visual Inspection	32	03 - 06 Feb	26 - 29 May	28 - 31 Jul	03 - 06 Nov
	Welder Qualifications					
	NDT Reports					
	Materials Test Certificates					
Examination			07 Feb	30 May	01 Aug	07 Nov

\* Contact elizabeth.shole@saiw.co.za who will put you on the waiting list. As soon as there are five prospective students, a course will be scheduled





# SAIW

# Welding and Fabrication Inspector Level 1

Incorporating IIW IWIP Basic Level

The SAIW Level 1 course introduces candidates to welding processes, its applications, advantages and disadvantages as well as typical defects. It also introduces candidates to materials technology and the impact of welding on material properties. Visual inspection, quality assurance and quality control and welder code approval are covered in Level 1.

This course has been in existence for over 40 years and has been continually refined to meet industry requirements. The course has been refreshed and refined to ensure it is completely up to date and will deliver more comprehensive knowledge than ever before. This is a result of amalgamating the SAIW Welding and Fabrication course with the IIW IWIP Basic course creating a world-class course.

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# **SAIW** **Welding and Fabrication** **Inspector Level 1**

**Incorporating IIW IWIP Basic Level**

**STUDENTS WILL COVER SOME OF THE FOLLOWING TOPICS:**



Upon successful completion of the SAIW Welding and Fabrication Inspectors Level 1, the candidate will be issued with the SAIW Welding and Fabrication Inspectors Level 1 qualification certificate and the IIW IWI Basic Diploma.

*(Please refer to the IIW IWI-basic requirements below)*

## **IIW IWI Basic Requirements**

According to the International Approvals Board (IAB) guidelines for the requirements for International Welding Inspector – Basic level, the practical part of the final examination is divided into two parts, one of which tests the competence of the candidate undertaking a range of inspection tasks. The second part will be an oral interview/examination to assess the candidate's comprehension of the tasks involved and written results and reports. The oral examination will test the candidate's understanding and interpretation of international quality standards and focuses on the quality aspects of international standards, and quality related documentation, such as control manuals.

**SAIW welding and fabrication inspector level 1 + practical oral = IWIP/B**

Once a student completes the Level 1 training, they may progress onto the SAIW Welding and Fabrication Inspectors Level 2 course. The progression will enable students to enhance their curriculum vitae.





# SAIW Welding and Fabrication Inspector Level 1

## Course Information



### Entry Requirements

- ✓ Matric Maths and Science with a minimum 50% **OR**
- ✓ Successful completion of SAIW's Introduction to Inspection course **OR**
- ✓ Passed first year in an Engineering Diploma OR Degree (N4) **OR**
- ✓ IWS, IWT or IWE qualification

## Course Outline

### WEEK 1

- Terms & Definitions
- Welding Processes
- Welding Defects

### WEEK 2

- Materials including Mill certificate
- Welding Symbols
- Visual Inspection
- Inspection Reports

### WEEK 3

- Welder Qualifications
- Welding Safety
- QA/QC including quality control plans

### WEEK 4

- Revision (3 days)
- Exam

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# SAIW

## Welding and Fabrication Inspector Level 1

### Course duration:

20 days + 3 days revision + 2 days exams

### PRICING (Including VAT)

Corporate Member **R 42,800**

Non-Corporate Member **R 46,300**

### Course Schedule | SAIW Welding & Fabrication Inspectors Level 1

#### JOHANNESBURG

WEEK	COURSE INFORMATION	HRS	JHB 01	JHB 02	JHB 03	JHB 04	JHB 05	JHB 06
1	Terms & Definitions	40	20 - 24 Jan	10 - 14 Mar	05 - 09 May	23 - 27 Jun	11 - 15 Aug	29 Sep - 03 Oct
	Welding Processes							
	Welding Defects							
2	Materials	40	10 - 14 Feb	31 Mar - 04 Apr	26 - 30 May	14 - 18 Jul	01 - 05 Sep	20 - 24 Oct
	Welding Symbols							
	Visual Inspection							
	Inspection Reports & Regulations							
3	Welder Qualifications	40	03 - 07 Mar	12 - 16 May	09 - 13 Jun	04 - 08 Aug	15 - 19 Sep	10 - 14 Nov
	Welding Safety							
	Quality Assurance/Quality Control							
4	Welder Qualifications	40	24 - 26 Mar	02 - 04 Jun	30 Jun - 02 Jul	25 - 27 Aug	06 - 08 Oct	01 - 03 Dec
	Welding Safety							
	Quality Assurance/Quality Control							
	Exam		27 - 28 Mar	05 - 06 Jun	03 - 04 Jul	28 - 29 Aug	09 - 10 Oct	04 - 05 Dec

#### SECUNDA | DURBAN | CAPE TOWN

Week	COURSE INFORMATION	HRS	SEC 01	DBN 01	CPT 01
1	Terms & Definitions	40	24 - 28 Feb	07 - 11 Jul	13 - 17 Oct
	Welding Processes				
	Welding Defects				
2	Materials	40	03 - 07 Mar	14 - 18 Jul	20 - 24 Oct
	Welding Symbols				
	Visual Inspection				
	Inspection Reports & Regulations				
3	Welder Qualifications	40	31 Mar - 04 Apr	11 - 15 Aug	17 - 21 Nov
	Welding Safety				
	Quality Assurance/Quality Control				
4	Welder Qualifications	40	07 - 09 Apr	18 - 20 Aug	24 - 26 Nov
	Welding Safety				
	Quality Assurance/Quality Control				
	Exam		10 - 11 Apr	21 - 22 Aug	27 - 28 Nov

# SAIW Welding and Fabrication Inspector Level 2

JOHANNESBURG, DURBAN, CAPE TOWN AND SECUNDA



## Course Information



### Entry Requirements



SAIW Welding & Fabrication  
Level 1 qualification

### Course Outline

- WEEK 1** • Construction and Design  
• Materials Technology II
- WEEK 2** • Destructive Testing  
• Non-Destructive Testing
- WEEK 3** • Heat Treatment  
• Inspection and Quality Assurance
- WEEK 4** • Procedure Qualification  
• Fabrication Applications Engineering  
• Legal Knowledge
- WEEK 5** • Examinations

The SAIW Welding Inspector training programmes are tailored to meet industry requirements for welding inspection personnel involved in the fabrication, petrochemical, refinery, process plant, power generation, construction and other industries.

The SAIW Welding and Fabrication Inspector Level 2 training programme is essential to complete the training and education requirements for most welding inspectors. It provides added knowledge of materials technology and the impact of welding on materials. Heat treatment requirements of the major codes of construction are covered as are destructive testing and non-destructive testing of welded joints. The course is essential for inspectors working in the fabrication, petrochemical, refinery, process plant, power generation, construction and other industries.

Inspectors with this qualification are prepared for approval for code compliance of welding procedures. With suitable experience the Inspector will also be prepared to take on inspection management responsibilities.

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# **SAIW**

## **Welding and Fabrication Inspector Level 2**

**– Incorporating IIW IWI Standard**



**Course duration:** 20 days + 3 days revision + 2 days exams

**PRICING (Including VAT)**

Corporate Member

**R 49,200**

Non-Corporate Member

**R 53,100**

Students having successfully completed the SAIW Welding and Fabrication Inspector Level 2 Inspector course may qualify for the internationally recognised IIW IWI Standard level diploma, subject to the requirements:

- 1** Both SAIW Level 1 and Level 2.
- 2** At least twenty years of age.
- 3** Have at least two years of relevant practical experience.
- 4** Students who qualified as SAIW Welding and Fabrication Inspector Level 2 before 2010 have to complete an extra 2 day module and exam in construction and design. (Details on application).
- 5** SAIW Welding and Fabrication Level 1 + Level 2 + Oral + 2 Years = IWIP-S.





# SAIW

## Welding and Fabrication Inspector Level 2



### Course Schedule | SAIW Welding and Fabrication Inspector Level 2

#### JOHANNESBURG, SECUNDA, DURBAN, CAPE TOWN

WEEK	COURSE INFORMATION	HRS	JHB 01	JHB 02	SEC 01	DBN 01	CPT 01
1	Construction and Design	40	17 - 21 Feb	28 Jul - 01 Aug	12 -16 May	17 - 21 Feb	19 - 23 May
	Materials Technology II						
2	Destructive Testing	40	10 - 14 Mar	18 - 22 Aug	09 - 13 Jun	24 - 28 Feb	26 - 30 May
	Non-Destructive Testing						
3	Heat Treatment	40	07 - 11 Apr	08 - 12 Sep	30 Jun - 04 Jul	31 Mar - 04 Apr	23 - 27 Jun
	Inspection and Quality Assurance						
4	Procedure Qualification	40	05 - 09 May	06 - 10 Oct	21 - 25 Jul	07 - 11 Apr	30 Jun - 04 Jul
	Fabrication Applications Engineering						
	Legal Knowledge						
5	Procedure Qualification	40	02 - 04 Jun	03 - 05 Nov	04 - 06 Aug	05 - 07 May	21 - 23 Jul
	Fabrication Applications Engineering						
	Legal Knowledge						
	Exam		06 - 07 Jun	06 - 07 Nov	07 - 08 Aug	08 - 09 May	24 - 25 Jul

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# International Welding Inspection Personnel - Comprehensive (IWIP-C)

**TECHNOLOGY/INSPECTION**

**JOHANNESBURG, DURBAN, CAPE TOWN AND SECUNDA**

## Course Information



### Entry Requirements

- ✓ IWI-S Level diploma plus 2 years experience at IWI-S Level
- ✓ Persons holding the IWE or IWT qualification are exempt from the technology component of IWI C and should contact SAIW training administration for details of a special course which covers only the inspection content of IWIP Basic, IWI Standard and IWI Comprehensive

### Course Outline

- Advanced Welding Processes
- Materials Technology
- Construction and Design
- Fabrication, Application, Engineering
- Testing of Welds
- QA/QC

The IWIP Comprehensive course is the most prestigious and the highest level of the IWIP courses. For candidates who have successfully completed the IWIP Standard course and are in possession of two years' Welding Inspection experience at the Standard level are eligible for the Comprehensive course.

On completing the course, inspectors will have extensive knowledge of welding and inspection theory and application. The course is presented in modular form similar to IWIP Standard and IWIP Basic i.e. there is a Technology module and an Inspection module that have to be successfully completed in order to attain the IWIP Comprehensive certificate.

Successful IWIP Comprehensive candidates will be able to manage all Inspection activities; supervise IWIP Basic and IWIP Standard personnel developing and then giving them appropriate (on-the job) instructions and act as technical experts for the inspection function.

People holding the IWT or IWE qualifications are exempt from the IWIP Comprehensive Technology module but are required to complete all the Inspection modules that is Basic Level, Standard Level and Comprehensive Level. SAIW will arrange appropriate courses subject to demand for IWE and IWT's.





# International Welding Inspection Personnel - Comprehensive (IWIP-C)

**Course duration:** 7 days + 2 days exam

**PRICING (Including VAT)**

Corporate Member	<b>R 26,500</b>
Non-Corporate Member	<b>R 28,600</b>

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your cellular phone.





# ABOUT Competent Persons

The SAIW Competent Person (CP) or Inspector of Pressurised Equipment (IPE) courses are ideal for persons intending to work as inspectors for an Approved Inspection Authority (AIA). The CP courses are suitable for engineering personnel responsible for in-service inspection requirements, whilst the IPE courses are suitable for engineering personnel responsible for newly built or repaired equipment according to the Pressure Equipment Regulations (PER).

After completion of the courses at SAIW the individual will gain his required practical experience (10 vessels or 10 boilers) at an Authorised Inspection Authority (AIA).

The CP Steam Generator (CP-SG) and CP Pressure Vessel (CP-PV) are authorised inspectors of in-service equipment, whilst IPEs are authorised inspectors on newly built or repaired components for Pressure Equipment.

Competent Persons			Inspector of Pressurised Equipment
Theory +	CP-PV (3-week course)	CP-SG (2-week course)	Inspectors Level 1 (4-week course)
			Inspectors Level 2 (5-week course)
			RT Interpreters (2-week course)
			ASME (2-week course)
Experience	10 Vessels (AIA)	10 Vessels (AIA)	10 Vessels (AIA)
=	CV	CV	CV
Certified	Certified CP-PV	Certified CP-SG	Certified IPE

# ABOUT Competent Persons

The CP certification will ensure that the user's responsibility in terms of the in-service inspection requirements of the Pressure Equipment Regulations (PER) are appropriately managed.

The IPE certification will ensure that the local fabricator or importer's responsibility in terms of the newly built or repaired inspection requirements of the Pressure Equipment Regulations (PER) are appropriately managed.

Both CP and IPE are certified personnel as required by the South African Department of Employment and Labour according to the Occupational Health and Safety Act.

CPs and IPEs are required to be certified by the SAQCC CP or SAQCC IPE certification bodies and it is an essential requirement that the candidates have successfully completed an approved training course for certification.

## Scope – CPs

Successful candidates will have a basic knowledge of common welding processes used in Steam Generator or Pressure Vessel manufacture and repair and the defects that may occur in original manufacture; have gained knowledge and understanding of the defects that arise in service and possible equipment failure mechanisms; have gained knowledge of the suitability of NDT test methods; understand the roles and responsibilities of the user, the AIA in-service and the competent person inspector in complying with the in-service inspection requirements of the PER and have sufficient technical knowledge to be able to perform in-service inspection.

## Scope – IPEs

Successful candidates will have extensive knowledge of common welding processes, weld metallurgy, heat treatment, NDT methods and welding coordination used in the fabrication and repair of steam generator and pressure vessels.

The candidate will be able to verify correct welders and welding procedures and be able to interpret and evaluate radiographs. The candidate will review data packs and sign them off on behalf of the AIA.

The IPE will understand the roles and responsibilities of the fabricator, the AIA for new and repaired pressure equipment. He will also liaise with the CP before the components are placed back in-service and the competent person inspector in complying with the in-service inspection requirements.

# Competent Persons

## Course Information



### Entry Requirements

- ✓ Matric **OR**
- ✓ Successful completion of SAIW's Introduction to Inspection Course **OR**
- ✓ Two years professional welding experience **OR**
- ✓ Gr. 10 plus a pass in an SAIW proficiency test **OR**
- ✓ Welding Inspection Level 1 qualification

### Steam Generators

**Course duration:** 10 days

**PRICING (Including VAT)**

Corporate Member	<b>R 26,500</b>
Non-Corporate Member	<b>R 28,600</b>

**Training Evaluation**

The Core Week examination has two parts which ensure candidates understand the requirements of the PER and have a good general knowledge of the common defects and failure mechanisms arising with steam generators in-service.

### Pressure Vessels

**Course duration:** 10 days

**PRICING (Including VAT)**

Corporate Member	<b>R 35,500</b>
Non-Corporate Member	<b>R 38,400</b>

**Training Evaluation**

The Core Week examination has two parts, which ensure candidates understand the requirements of the PER and have a good general knowledge of the common defects and failure mechanisms arising with pressure vessels in-service.



# Competent Persons

## Course Schedule | Competent Persons Steam Generators

JOHANNESBURG, DURBAN					
WEEK	COURSE INFORMATION	HRS	JHB 01	JHB 02	DBN 01
1	Legislation	40	20 - 24 Jan	09 - 13 Jun	08 - 12 Sep
	PER Codes and Standards				
2	Legislation	32	03 - 06 Feb	23 - 26 Jun	15 - 18 Sep
	PER Codes and Standards				
	Exam		07 Feb	27 Jun	19 Sep

## Course Schedule | Competent Persons Pressure Vessels

JOHANNESBURG, CAPE TOWN, DURBAN					
WEEK	COURSE INFORMATION	HRS	JHB 01	CPT 01	DBN 01
1	API 510 Inspection of Pressure Vessels	40	27 - 31 Jan	03 - 07 Mar	12 - 16 May
	API RP 572 Inspection Practice For Pressure Vessels				
	API RP 571 Damage Mechanisms Affecting Fixed Equipment in the Refining Industry				
	API RP 577 Welding Processes, Inspection and Metallurgy				
2	NB-23 National Board Inspection Code- Part 2 - Inspection	40	10 - 14 Feb	10 - 14 Mar	19 - 23 May
	ASME PCC-2 Repair of Pressure Equipment and Piping				
	API RP 580 Risk-based Inspection				
	API 579 Fitness for Service				
3	PER- Pressure Equipment Regulations	24	24 - 26 Feb	24 - 26 Mar	02 - 04 Jun
	SANS 347 - Categorization and Conformity Assessment Criteria for all Pressure Equipment				
	SANS 10227 - Criteria for the Accreditation of Approved Inspection Authorities Performing Inspection in Terms of the Pressure Equipment Regulations				
	Exam		27 - 28 Feb	27 - 28 Mar	05 - 06 Jun





# Engineers' Appreciation of Welding

## Course Information

In many companies a mechanical or electrical engineer, engineering superintendent or engineering supervisor is given the responsibility of managing 'the welding department'. Often this engineer will have absolutely no welding background and almost certainly his/her university or college study programme will have included no training in welding technology. If the engineer is lucky he/she may be assisted by an experienced welder or even a welding supervisor but this is not enough to accept the responsibilities assigned to his/her job.

For these reasons the course is one of the Institute's oldest courses and one of its most successful. The course was first developed in the early 1980s when it was derived from an in-company training course. It has been continuously updated to ensure industry relevance. Many engineers from all types of large companies and parastatals have attended the course as part of their professional development. It is, however, an extremely

important course for engineers working in smaller companies where there is very little in-house back-up for the engineer who has to be a jack-of-all-trades.

The course introduces engineers to the complexities of welding, informing them of what can go wrong and the consequences of a failure including economic disaster. It covers the common welding processes and their applications. It describes the effect of welding on materials and welding defects and their causes. It looks at cost issues, the need for qualified welding procedures and how to go about specifying them. Importantly engineers are encouraged to bring their welding experiences and problems to the course for sharing with the class in discussion. The case history discussion period is held at the end of the course and is often one of the most helpful parts of the course for the engineer. It's very much about helping the engineer to know and be aware of when he/she needs to bring in specialist help.



### Entry Requirements

SAIW does not restrict access to this course but it is important to note that it is primarily aimed at plant, maintenance and project engineers, engineering superintendents, engineering technicians tasked with managing the welding function and senior quality assurance personnel.

### Course Outline

- Terms and definitions related to welding
- Introduction to welding processes
- Basic metallurgy
- Welding defects
- Introduction to non-destructive testing
- Inspection and quality assurance
- Codes of manufacture

# Engineers' Appreciation of Welding

## PLEASE NOTE:

The Appreciation of Welding course is designed to provide personnel with an overview of welding technology in order to understand welding better and make informed welding related decisions.

The course can be held in-company and anyone interested in running the course can contact Confidence Lekoane on [confidence.lekoane@saiw.co.za](mailto:confidence.lekoane@saiw.co.za).

**Course duration:** 5 days

### PRICING (Including VAT)

Corporate Member **R 15,000** Non-Corporate Member **R 16,100**

## Course Schedule | Engineers' Appreciation of Welding

### JOHANNESBURG

WEEK	COURSE INFORMATION	HRS	JHB 01	JHB 02
1	Overview of Welding Technology	40	24 - 28 Mar	11 - 15 Aug



CPD credits available  
for this course

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# ASME Codes of Construction and the National Board Inspection Code

## Course Information

This ASME Codes of Construction course is ideal for welding inspectors involved in boiler and/or pressure vessel fabrication, repair or modification. The course is mandatory for inspectors aiming for certification as an Inspector of Pressure Equipment (IPE) with the intention of working for an Approved Inspection Authority (AIA).

The syllabus includes requirements for welding, fabrication and inspection: design of vessels and boilers; allowable materials; strength calculations for openings; qualification of welders and welding procedures; inspection and tests; marking and reports; pressure relief devices; duties of inspectors; using

the codes and calculations. NBIC is used for post construction activities in the installation, inspection, repair and alteration of pressure retaining equipment.

The course is suitable for project and maintenance engineers and engineering supervisors with responsibility for boilers and pressure vessels and as an introduction to the ASME Code.

Candidates should have a Grade 10 qualification as a minimum. Candidates should preferably have completed the SAIW level 2 welding inspector qualification prior to doing this course, which is a requirement for IPE certification.



## Entry Requirements

- ✓ There are no specific entry requirements for engineering personnel attending the course
- ✓ Welding fabrication inspectors should preferably attain the SAIW Level 2 qualification before attending this course

## Course Outline

The course content covers:

- ASME Section I
- ASME Section VIII Division I
- ASME Section IX
- National Board Inspection Code

# ASME Codes of Construction and the National Board Inspection Code

## The Course Is intended for:

Welding fabrication inspectors, engineers, technologists, technicians and supervisors who wish to improve their knowledge of these codes.

**Course duration:** 10 days

## PRICING (Including VAT)

Corporate Member **R 26,500**

Non-Corporate Member **R 28,600**

## THE COURSE ADDRESSES THE REQUIREMENTS OF:

**1**

**ASME Section 1 – Rules of Construction for Power Boilers.**

**2**

**ASME Section VIII Division 1 – Rules of Construction for Pressure Vessels.**

**3**

**ASME Section IX – welding and brazing qualifications and NBIC – National Board Inspection Code.**

Successful graduates will have an appreciation for the code requirements and be able to use the codes and interpret and apply the fabrication and inspection requirements in their daily work activities. The course is specifically designed to introduce students on the use of relevant code sections in a logical and methodical manner.

## Course Schedule | ASME Codes of Construction

### JOHANNESBURG, DURBAN, CAPE TOWN

WEEK	COURSE INFORMATION	HRS	JHB 01	DBN 01	CPT 01
1	ASME Section VIII and NBIC	32	20 - 23 Jan	10 - 13 Nov	10 - 13 Nov
	Exam		24 Jan	14 Nov	14 Nov
2	ASME Section I and Section IX	32	27 - 30 Jan	17 - 20 Nov	17 - 20 Nov
	Exam		31 Jan	21 Nov	21 Nov





# AWS D1.1 – Steel Structure

## Course Information

AWS D1.1 code is widely used both locally and internationally for managing welding quality in structural steel constructions and buildings, bridges, draglines, oil production platforms, mining headgear, shaft steelwork, earthmoving and mining equipment, as well as power station structures.



## Entry Requirements

Personnel involved in the fabrication of steel structures including inspection, quality control and fabrication should attend this course. Engineering personnel wishing to improve their understanding of inspection and quality control during fabrication of steel structures are also encouraged to attend this course.

## Course Outline

This course provides an understanding of this welding fabrication code and covers the following aspects of the 2015 version of the code:

- Section 1 - General requirements related to welded steel structures
- Section 3 - Pre-qualified welding procedures
- Section 4 - Welding procedure and performance qualification
- Section 5 - Fabrication requirements
- Section 6 - Inspection requirements
- Practical exercises in the use of the code



# AWS D1.1 – Steel Structure

**Course duration:** 3 days

**PRICING (Including VAT)**

Corporate Member **R 9,400**

Non-Corporate Member **R 10,200**

**SUCCESSFUL CANDIDATES WILL BE ABLE TO USE  
AND INTERPRET THE CODE WITH REGARDS TO:**

- 1 Pre-qualified welding procedures
- 2 Qualification of welders and welding procedures
- 3 Allowable materials
- 4 Fabrication requirements
- 5 Inspection and tests
- 6 Marking and reports

The course is intended to focus on the fabrication and inspection requirements of the code.  
It is not intended to cover design aspects.



CPD credits available  
for this course

## Course Schedule | AWS D1.1 – Steel Structures

### JOHANNESBURG, DURBAN, CAPE TOWN

WEEK	COURSE INFORMATION	HRS	JHB 01	DBN 01	CPT 01
1	AWS D1.1 – Steel Structure	24	14 - 16 Apr	22 - 24 Apr	29 - 30 Apr, 2 May





# HEAT TREATMENT Practitioner

## Course Information

Covers heat treatment requirements for the fabrication of pressure vessels, steam generators and process equipment.

The following fabrication codes are dealt with in this course:

- AASME VIII
- EN13445
- AWS D1.1
- BS2633
- EN13480

Heat Treatment Practitioner performing local heat treatment of welded fabrications on site, or in a workshop, using resistance heating, will benefit from this course. The course is also suitable for maintenance personnel who are responsible for supervising heat treatment operations. Candidates who preferably have a Grade 10 qualification as well as experience in engineering and/or metal working is recommended.

## Course Content

- PRACTICAL**
- Determining pre- and post-weld heat treatment requirements to codes and standards
  - Determining heating and insulation band widths
  - Determining heating configurations on nozzles
  - Setting up equipment for weld heat treatments – thermocouples, heaters, insulation
  - Operating heat treatment equipment
- THEORY**
- Basic metallurgy
  - Heat treatment definitions
  - Welding processes
  - Welding effects on materials – why is heat treatment necessary?
  - Heat treatment cycles, heating and cooling rates, soaking temperatures, soaking times
  - Code and material specification requirements for welding
  - Pre-heat, post-weld heat treatment, normalising, annealing, hydrogen removal
  - Methods of heat treatment
  - Equipment

# HEAT TREATMENT Practitioner

**Course duration:** 10 days

**PRICING (Including VAT)**

Corporate Member **R 26,500**

Non-Corporate Member **R 28,600**

**SUCCESSFUL CANDIDATES WILL:**

**1**

understand the necessity to perform pre- and post-weld heat treatments

**2**

be able to determine heat treatment cycles in accordance with various codes

**3**

be able to set up and operate heat treatment equipment

**For the below courses, book by emailing [info@saiw.co.za](mailto:info@saiw.co.za)**

As soon as the minimum number of people have been booked in your region, the course will be scheduled.

**Course Schedule | [Heat Treatment Practitioner](#)**

**JOHANNESBURG, DURBAN, CAPE TOWN**

WEEK	COURSE INFORMATION	HRS	JHB 01	DBN 01	CPT 01
1	Welding Processes	40	*	*	*
	Materials				
2	Post Weld Heat Treatment Codes	40	*	*	*
	Examination - Paper A	3	*	*	*
	Examination - Paper B	3	*	*	*

\* Contact [elizabeth.shole@saiw.co.za](mailto:elizabeth.shole@saiw.co.za) who will put you on the waiting list.  
As soon as there are five prospective students, a course will be scheduled.

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# PAINT Inspector

## Course Information

The Paint Inspectors (PI) course provides candidates with the basic knowledge of surface preparation and paint application to ensure engineering materials are suitably protected from environmental decay and/or corrosion, through the use of protective coatings.

Furthermore, the practical content of the course enables the candidate not only to assess the application process and newly applied protective layers, but also to identify coating damage on established installations.

Candidates who are involved in the surface preparation, paint application or corrosion protection industries, who want to further their career opportunities in the supervisory or coating evaluation facets of corrosion protection of engineering materials, may apply.

## Course Content

### PRACTICAL

- Assessment of environmental conditions relating to coating application
- Perform inspections on newly prepared substrates
- Evaluate newly coated surfaces
- Test various aspects of an established coating system and identify typical coating damage and failures

### THEORY

- Principles of corrosion
- Corrosion protection
- Selection of coating systems
- Surface preparation methods and applicable standards
- Paint constituents
- Application methods and applicable standards
- Paint specifications and datasheets
- Measurement and evaluation techniques and processes
- Site and shop applications
- Coating defects and failures
- Definitions of coating related terms

These results and instructions are consequently used to generate suitable report sheets.



# PAINT Inspector

**Course duration:** 4 days and 1 day examination

**PRICING (Including VAT)**

Corporate Member **R 15,000**

Non-Corporate Member **R 16,100**

**Course Schedule | Paint Inspector**

JOHANNESBURG			
WEEK	COURSE INFORMATION	HRS	JHB 01
1	Theory and Practical	32	01 - 04 Sep
	Exam		05 Sep

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# WELDING Symbols

## Course Information

Welding symbols are used as a pictorial language to convey weld requirements. The weld symbol conveys to the fabricator the position of welds, type of joint to be used, the size of the weld and the amount of weld metal to be deposited.

Welders that work with fabrication drawings must be able to interpret welding symbols to prepare the joint and apply a weld that meets the specifications. Welding inspectors must be able to read and interpret welding plans.

The welding symbol course provides a detailed review of the use of welding symbols in the fabrication environment.

The course covers the use of the European system for welding symbols (ISO 2553) as well as the use of the American system (AWS A2.4).

The course will also deal with the difficulties encountered in engineering design and fabrication workshops with the use of two different systems. Concepts covered in the course include, joint types and weld types, basic joint geometry, key

terms, and basic rules of welding symbols and non-destructive testing symbols.

The course covers all types of welds including groove welds, fillet welds, plug and slot welds, spot and projection welds, and stud, seam, surfacing, and edge welds.

This course is ideal for all fabrication personnel including welding supervisors, quality controllers and welding inspectors. The course is also ideal for personnel involved in engineering design as well as draughting and detailing personnel.



# WELDING Symbols

**Course duration:** 1 day

**PRICING (Including VAT)**

Corporate Member **R 3,250**

Non-Corporate Member **R 3,500**

**Course Schedule | Welding Symbols**

**JOHANNESBURG**

JHB 01	JHB 02
19 Jun	08 Sep



CPD credits available  
for this course

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# Weld Quality Management and Welding Coordination

## ISO 3834 and ISO 14731

### Course Information

Manufacturing processes such as fusion welding are widely used to produce many products, and for some companies, these are the key production features.

Products may range from simple to complex. Examples include pressure vessels, domestic and agricultural equipment, cranes, bridges, transport vehicles and other items. These processes exert a profound influence on the cost of manufacture and on the quality of the product.

It is therefore important to ensure that these processes are carried out in the most effective way and that appropriate control is exercised over all aspects of the operation.

The ISO 3834 Quality Management System will be consulted to clearly define all the welding related aspects and how to manage them on a day to day basis.

The course is aimed at assisting those in the Welding Coordination teams to implement and manage ISO 3834 as well as to familiarise them with their roles as stated in the ISO 14731 Standard.





# Weld Quality Management and Welding Coordination

**Course duration:** 1 day

**PRICING (Including VAT)**

Corporate Member **R 3,200**

Non-Corporate Member **R 3,500**

**Course Schedule | Weld Quality Management and Welding Coordination**

JOHANNESBURG, DURBAN, CAPE TOWN					
WEEK	COURSE INFORMATION	HRS	JHB 01	DBN 01	CPT 01
1	ISO 3834 and ISO 14731	8	*	*	*

**No exam. You will receive a certificate of attendance.**

\* Contact [elizabeth.shole@saiw.co.za](mailto:elizabeth.shole@saiw.co.za) who will put you on the waiting list. As soon as there are five prospective students, a course will be scheduled.

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# SAIW / ISO 3834 certification is vital for successful mining.

By using SAIW / IIW ISO 3834 certified suppliers for your mining operations,  
you'll ensure the quality of welded fabrications improve safety on the mine  
and minimize costly downtime as well.

Since 2008, the Southern African Institute of Welding (SAIW)  
in association with the leading global authority on welding  
The International Institute of Welding (IIW) has been ensuring  
and verifying compliance with international ISO 3834 standards.

## SAIW / IIW ISO 3834 Certification is good for mining.



**SAIW**  
Certification





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# ABOUT Non-Destructive Testing (NDT)

Non-Destructive Testing (NDT) refers to the testing of material and components without inhibiting its further usefulness. Applied scientific principles such as electromagnetic induction, magnetism, capillary action, mechanical vibration, electromagnetic waves, etc. are utilised to identify and characterise discontinuities within tested samples or areas of interest.

Training for NDT is provided by the SAIW in compliance with the ISO/TS 25108 in accordance with the syllabus provided in ISO/TS 25107 (ANSI/ASNT CP 105 as well as IAEA Tecdoc 628 are also incorporated) and recognised by an ISO/IEC 17024 accredited Personnel Certification Body (PCB) under the scope of ISO 9712, i.e. SAIW Certification PCB, which operates the SAIW Certification NDT Scheme.

The SAIW Certification NDT scheme is the very first NDT qualification and certification scheme developed 'in Africa by Africans for Africans' that is registered under the ICNDT Mutual Recognition Agreement (MRA) Schedule 2 through the SAIW Certification Personnel Certification Body (PCB).

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## ABOUT Non-Destructive Testing (NDT)

### TRAINING IS SECTOR SPECIFIC AND CAN BE SUBDIVIDED INTO THE FOLLOWING MAIN SECTIONS:

1. Terminology and history
2. Physical principles
3. Product technology and method capabilities
4. Equipment
5. Testing information
6. Testing process
7. Interpretation / evaluation and reporting
8. Assessment
9. Quality Aspects
10. Developments

Assessment quality aspects and developments training, qualification and certification is subdivided into three levels as stipulated by ISO 9712 new issue published in 2021

#### Level 1

An individual certified to **Level 1** has demonstrated competence to carry out NDT according to written instructions and under the supervision of Level 2 or Level 3 personnel. Level 1 personnel may be authorized to perform the following in accordance with NDT instructions: set up NDT equipment; perform the tests; record and classify the results of the tests according to written criteria; report the results.

#### Level 2

**Level 2** personnel may be authorized by the employer to perform certain tasks which include: select the NDT technique for the testing method to be used; define the limitations of application of the testing method; translate NDT codes, standards, specifications, and procedures into NDT instructions adapted to the actual working conditions; set up and verify equipment settings; perform and supervise tests; provide guidance for personnel at or below Level 2; report the results of NDT.

#### Level 3

**Level 3** personnel may be authorized to perform certain tasks which include: assume full responsibility for a test facility or examination centre and staff; interpret standards, codes, specifications, and procedures; carry out and supervise all tasks at all levels; provide guidance for NDT personnel at all levels.



**UNLOCKING YOUR PATH TO  
NDT SUCCESS:**

# The Ultimate Course Order Guide

To embark on a successful career in Non-Destructive Testing (NDT), it's crucial to follow a well-structured path.

The correct order of SAIW NDT courses can make all the difference to your journey (see next page).

[www.saiw.co.za](http://www.saiw.co.za)

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## UNLOCKING YOUR PATH TO NDT SUCCESS:

# The Ultimate Course Order Guide

Level 1	<b>Liquid Penetrant Testing (PT) Course</b>	Start with PT, an excellent introductory course that teaches you how to detect surface defects using liquid penetrants.
	<b>Magnetic Particle Testing (MT) Course</b>	Next, delve into MT, where you'll learn to identify surface and near-surface flaws using magnetic fields.
	<b>Visual Testing (VT) Course</b>	VT enhances your visual inspection skills, a fundamental ability in NDT.
	<b>Radiographic Testing (RT) Course including RT Safety</b>	Radiographic testing teaches you to use X-rays and gamma rays to inspect materials. Safety is paramount.
	<b>Ultrasonic Testing (UT) WT</b>	UT introduces you to the versatile world of ultrasonic testing, which is invaluable in many industries.
	<b>Ultrasonic Testing (UT)</b>	Build on your UT knowledge to become proficient in this widely-used NDT technique.
	<b>Eddy Current</b>	Explore Eddy Current testing, which is especially beneficial in the aerospace industry.
These levels represent opportunities for advanced training and specialisation, including becoming a Welding Inspector.		<p>Overall, NDT offers a promising career with above-average pay, global opportunities, and room for growth. Those with NDT expertise have a unique passion for precision and are committed to doing things right. As you progress through these courses and levels, you'll gain the skills and knowledge necessary to become an indispensable part of the industries that rely on NDT for quality assurance including the power generation, petrochemical and mining sectors.</p> <p><b>REMEMBER!</b> Your NDT journey is a stepping stone to success, with each course adding to your expertise and career prospects.</p>





# WHAT YOU NEED TO BUILD YOUR CAREER IN NON-DESTRUCTIVE TESTING

**1** You need to be  
**ANALYTICAL**  
**INTELLIGENT**  
**HIGH LEVEL**  
**ATTENTION**  
**TO DETAIL**

If you're one of the few people who're good at science & math, and have an enquiring mind, becoming an NDT professional will give you the chance of making a valuable future.

**2** Consider yourself  
**INQUISITIVE**  
**PERSISTENT**  
**INTUITIVE**

Being persistent and inquisitive, with a problem-solving attitude, studying SAIW's NDT courses will be your most flexible start to a better future.

**3** You must be  
**AMBITIOUS**  
**MOTIVATED**  
**KEEN**

If you're ambitious & motivated, contact the SAIW or visit [www.saiw.co.za](http://www.saiw.co.za) OR Call 011-298 2100 to enquire about our NDT courses.

**4** **THEN**  
You will be able to  
**EARN**  
**WHILE**  
**YOU**  
**LEARN**

Studying NDT through SAIW means you'll be able to move through all the NDT levels at your own pace and as you can afford to. You'll also be able to earn while you learn, continuing to study as it suits you.

SAIW provides training programmes, consultancy and industry support services to the metal industries in South Africa. The SAIW is active throughout Southern Africa, the Indian Ocean Islands and the Middle East. SAIW qualifications & certifications are regarded as the industry standard in South Africa and enjoy international recognition.

Non-Destructive Testing (NDT) is the testing of material or manufactured components without destroying their usefulness. Applying scientific techniques such as electromagnetic induction, magnetism, capillary action, mechanical vibration or electromagnetic waves, and other testing techniques, to identify potential flaws or failures within supplied samples.



**SAIW**

Southern African Institute of Welding

Call 011-298 2100 or visit [www.saiw.co.za](http://www.saiw.co.za)



# INTRODUCTION TO Non-Destructive Testing (NDT)

Non-Destructive Testing (NDT) stands at the forefront of modern scientific evaluation, enabling the examination of materials and components without compromising their integrity or future usability. This field represents a marriage of applied scientific principles that encompass a diverse array of techniques, including electromagnetic induction, magnetism, capillary action, mechanical vibration, electromagnetic waves, and more. These techniques are harnessed to meticulously uncover, characterise, and comprehend discontinuities present within the tested samples or areas of interest.

NDT is more than just a method; it's a commitment to the pursuit of safety, quality, and reliability across a multitude of industries. It's the means by which hidden flaws are unveiled, structural integrity is assured, and material performance is scrutinised without the need for destructive testing methods. As we delve deeper into this prospectus, we invite you to explore the captivating world of NDT, where science, technology, and innovation converge to ensure the continued success and safety of our modern world.



# NDT BOOKING PROCEDURE

## PLEASE NOTE:

Once we have received all correct documents and payment has been confirmed, you will receive, via email, a “Booking Confirmation Notice” This booking confirmation notice will include the date of the NDT course, venue and full address.

## DRESS CODE

Wear long pants, shirt and safety boots. Also consider suitable protective clothing such as overalls for the practical sessions.

- Please ensure that you comply with the course access conditions prior to enrolling for the course.
- Refer to the access conditions indicated on the NDT Access Conditions Table.
- Further information is available on the SAIW website: [www.saiw.co.za](http://www.saiw.co.za)
- Full payment is to be made prior to the commencement of the course and exam.
- All prices indicate the combined total for both the training and initial qualification examination costs.
- All prices quoted include VAT.

## Documentation Required for Course Enrolment:

1. “Course Enrolment Application Form” – completed in full.
2. Confirmation of full payment.
3. Legible copy of highest academic qualifications (school, college, university, etc.) and / or pass mark in Proficiency Test.
4. Company letter stating delegate’s current employment status (if applicable).
5. Legible copy of ID or Passport.
6. When doing any Level 2 or Level 3 course, confirmation of the preceding Level qualification (training record and examination result letter) is required.

## What you Need to Bring Along:

1. 4 Coloured ID photo’s taken within the previous 6 months.
2. Copy of your ID or Passport.
3. Stationery, e.g. pen, pencil, note book, eraser and highlighter and scientific calculator.
5. Copy of the booking confirmation letter.
6. A 100% attendance of the course is a prerequisite for the qualification examination.

## Cancellation of Training:

1. The SAIW reserves the right to cancel the holding of a course at short notice, should student numbers not meet our minimum course requirements. Candidates shall be informed of the cancellation two weeks prior to the training start date and arrangements will be made to book the candidate on the next available course. Should the student / applicant decide the alternative arrangement is unsuitable, the full course fees will be reimbursed in these circumstances. Personal costs relating to accommodation and travelling cannot be claimed.
2. If the course booking is cancelled by the applicant less than 30 (thirty) days prior to the training start date, then the cancellation charge will be equal to the full course cost and no refund is applicable.
3. If the course booking is cancelled by the applicant 30 (thirty) days or more prior to the training start date, a cancellation charge of 4% (plus VAT) of the course fees will be charged by the SAIW as an administration fee and the balance of the fees refunded to the applicant. In these circumstances only the balance of the course fees will be reimbursed and no personal costs relating to accommodation and travelling may be claimed by the applicant.

# TRAINING: NDT Access Conditions

## Level 1: MT, VT, PT

Direct access to the course shall be granted if the candidate has passed both mathematics and science in Grade 10 (Proof of Grade 10 – or equivalent such as N1; certificate is required).

## Level 1: UT, RT, ECT

Please note that RT Safety is mandatory for access to an RT 1 course and no RT 1 certificate shall be issued unless a RT Safety certificate in accordance with DOH and issued by SAINT Professional Body can be shown. Direct access to the course shall be granted if the candidate has passed both mathematics and science in Grade 12 (Proof of Grade 12 – or equivalent such as N3 certificate is required).

Alternatively, the candidate shall be required to pass a Proficiency Exam for surface methods, prior to being eligible to sit the applicable NDT course.

Please note that the Proficiency test is free of charge and only assesses the basic skills relating to mathematics, science, comprehension and communication capabilities required within the applicable NDT method. The pass mark for the Proficiency test is 70%. Please contact Harold Jansen (harold.jansen@saaw.co.za) to ascertain availability and to make a booking. Proficiency tests are performed on Thursdays between 8:00 and 11:00. In the case of candidates not being able to attend the Proficiency test due to transport problems, arrangements can be made to have the test e-mailed to a suitable invigilator and returned via email once completed.

## Level 2: All Methods

Candidate shall be qualified i.e. have received training in accordance with ISO9712 requirements and have passed the Level 1 qualification examinations (certified is preferred) as a Level 1 NDT Technician in the applicable method and sector.

Access to advanced / derived techniques requires a valid Level 2 certificate in the relevant method.

### **DIRECT ACCESS TO LEVEL 2:**

Candidate shall have passed both mathematics and science at Grade 12 level (Equivalent to N3 - Proof of Grade 12 certificate is required) and have applicable tertiary qualification(s) and/or relevant NDT experience. Combination of Level 1 and Level 2 Training hours in accordance with an approved syllabus and training programme as per SAIW Certification NDT Scheme requirements and based on Certification body approval. The Level 1 qualification examinations shall also have been successfully passed.

## Level 3: All Methods

Candidate shall be qualified i.e. received training in accordance with ISO9712 requirements and have passed the Level 2 qualification examinations (certified is preferred) as a Level 2 NDT Technician in the applicable method and sector, appropriate tertiary qualifications (relevant to the NDT method - chemistry, mathematics or physics; and/or to the product or industry sector - chemistry, metallurgy, engineering etc.) are advantageous.

All candidates for Level 3 Certification in any NDT method shall have successfully completed the Level 2 Practical exam. (If not certified as Level 2, the practical examination shall have been passed within 1 year from date of writing the Level 3 main method examination).

Valid Level 2 Certificate in the applicable method and sector is mandatory when equipment operation or accepting tested components are required.

### **DIRECT ACCESS TO LEVEL 3:**

Combination of Level 1, 2 and 3 Training hours in accordance with an approved syllabus and training program as per ISO 9712 and SAIW Certification NDT Scheme requirements and based on Certification body verification. The Level 2 qualification examinations shall also have been successfully passed. No reduction in requirements for industrial experience. Suitable tertiary qualifications (relevant to the NDT method - chemistry, mathematics or physics; and / or to the product or industry sector - chemistry, metallurgy, engineering etc.) are mandatory.



# Penetrant Testing

## Course Information

Penetrant Testing (PT), also known as Liquid Penetrant Testing, is a highly versatile surface-based non-destructive testing (NDT) method. This technique employs a liquid containing a coloured dye, enhancing its visibility, to infiltrate and fill any open voids on the surface through capillary action. Once the excess penetrant is meticulously removed from the surface, a developer substance is applied. This developer acts as a contrasting medium, facilitating the migration of the penetrant from within the defects. Consequently, any discontinuities or flaws become prominently visible against the contrasting background, typically a white powder.

One of the remarkable attributes of PT is its applicability across a wide range of materials, provided that the discontinuity of interest is accessible from the surface. If you possess an affinity for chemistry, particularly the interplay of liquids, and find fascination in precision work that goes beyond swimming or indulging in the occasional beverage, then Penetrant Testing offers a fulfilling career path.

The effectiveness of PT is influenced by several factors, including the type of dye used (whether it's designed for normal light or backlight conditions, or both), the specific penetrant employed, the method used to remove excess penetrant, and the developer chosen for the testing process. Additionally, PT techniques must adapt to extreme temperatures, as variations in temperature can affect liquid properties such as viscosity and evaporation. Specialised techniques are employed in cases of excessively high or low temperatures to ensure accurate and reliable results.

Embarking on a career in PT allows you to explore the fascinating intersection of chemistry, materials science, and meticulous precision, making it one of the fundamental and indispensable NDT methods in various industries.

[www.saiw.co.za](http://www.saiw.co.za)

Please refer to contacts on page 26

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Course Prospectus App onto  
your cellular phone.



# Penetrant Testing

If you enjoyed chemistry at school and your interest in liquids exceeds that of swimming and the occasional beer, then we invite you to start your career in one of the most basic yet useful NDT methods.

Inspection techniques depend on whether the dye used is under normal light or backlight conditions (or both), the type of penetrant, excess penetrant removal process as well as developer used during testing. Furthermore,

since temperature has an effect on the liquid properties, such as viscosity and evaporation, special techniques are applicable at excessively high and low temperatures.

**The training course is based on general theory as well as sector specific applications relating, but not limited to, the following standards and specifications:**

- ASME Boiler & Pressure Vessel Code - Section V - Subsection A - Article 1 & 6
- ASME Boiler & Pressure Vessel Code - Section V - Subsection B - Article 24
- ISO 3452 Part 1 PT – General Principals
- ISO 3452 Part 2 PT – Testing of penetrant materials
- ISO 3452 Part 3 PT – Reference test blocks
- ISO 3452 Part 4 PT – Equipment
- ISO 3452 Part 5 PT – Testing at temperatures > 50 °C
- ISO 3452 Part 6 PT – Testing at temperatures < 10 °C
- ISO 12706 PT – Vocabulary
- ISO 23277 PT – Acceptance Levels

## PENETRANT TESTING - SAIW CERTIFICATION NDT SCHEME (ISO 9712) | NON-DESTRUCTIVE TESTING - SURFACE METHODS

NDT Method and Level	Industrial Sector	Product Sector / Category	Duration 1 day = 8 hours	Prices (Inclusive of VAT)			Course & Initial Exam Dates				
				Training & Initial Examination Non-Corporate Members	Training & Initial Examination Corporate Members	Initial Certification					
Penetrant Testing Level 1	Pre- and in-service	PT 1.1 Forging (f)	Training 4 days  Exam 1 day	R 16,100	R 15,000	R 2,500	Course Code	PT 1 A JHB 01	PT 1 A JHB 02	PT 1 A JHB 03	PT 1 A JHB 04
		PT 1.2 Castings (c)					Training	20 - 23 Jan	09 - 12 Jun	15 - 18 Sep	24 - 27 Nov
		PT 1.3 Welds (w)					Exam	24 Jan	13 Jun	19 Sep	28 Nov
Penetrant Testing Level 2	Pre- and in-service	PT 2.1 Forging (f)	Training 4 days  Exam 1 day	R 16,100	R 15,000	R 2,500	Course Code	PT 2 A JHB 01	PT 2 A JHB 02	PT 2 A JHB 03	PT 2 A JHB 04
		PT 2.2 Castings (c)					Training	24 - 27 Feb	07 - 10 Jul	06 - 09 Oct	03 - 06 Nov
		PT 2.3 Welds (w)					Exam	28 Feb	11 Jul	10 Oct	07 Nov

# Magnetic Particle Testing

## Course Information

Magnetic Particle Testing (MT) is a surface and shallow subsurface non-destructive testing (NDT) method that leverages the inherent magnetic properties of materials to uncover surface flaws and significant indications just beneath the surface. The material being tested must possess magnetic qualities, allowing magnetic fields to be either generated within or passed through it. Consequently, MT is primarily applicable to ferromagnetic materials, characterized by having a magnetic permeability significantly greater than 1.

If you have a keen interest in magnetism and are intrigued by the utilization of magnetic fields to identify discontinuities within ferromagnetic materials, Magnetic Particle Testing is the ideal starting point for your NDT career journey.

The techniques employed in MT vary depending on several factors, including the type of current utilised for magnetisation, whether the excitation current is maintained during the application of magnetic particles, and the nature of the magnetic field generated—whether it is linear or circular. Additionally, the method description should encompass details about the specific type of magnetic particles employed to render the indications visible, further enhancing the precision and effectiveness of the testing process.

Embracing MT as your chosen NDT path will immerse you in the captivating realm of magnetism, offering a unique perspective on how magnetic fields are harnessed to detect flaws and discontinuities in ferromagnetic materials—a skill set highly sought after in various industries where material integrity and safety are paramount.

[www.saiw.co.za](http://www.saiw.co.za)

Please refer to contacts on page 26

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# Magnetic Particle Testing

If you are interested in magnetism and would like to find out how magnetic fields are used to detect discontinuities in ferromagnetic material then Magnetic Particle Testing is the place to start your career in NDT.

Inspection techniques depend on the type of current being used to magnetise the material, whether the excitation current is maintained during the application of magnetic particles or not as well as the nature of the

magnetic field generated i.e. linear or circular. In addition the technique description should also refer to the type of magnetic particles used to make indications visible.

**The training course is based on general theory as well as sector specific applications relating, but not limited to, the following standards and specifications:**

- ASME Boiler & Pressure Vessel Code - Section V - Subsection A - Article 1 & 7
- ASME Boiler & Pressure Vessel Code - Section V - Subsection B - Article 25
- ISO 9934 Part 1 MT – General Principals
- ISO 9934 Part 2 MT – Detection media
- ISO 9934 Part 3 MT – Equipment
- ISO 12707 MT - Vocabulary
- ISO 17638 MT – Welds
- ISO 4986 MT – Castings
- ISO 23278 MT – Acceptance Levels

MAGNETIC PARTICAL TESTING - SAIW CERTIFICATION NDT SCHEME (ISO 9712)   NON-DESTRUCTIVE TESTING - SURFACE METHODS											
NDT Method and Level	Industrial Sector	Product Sector / Category	Duration 1 day = 8 hours	Prices (Inclusive of VAT)			Course & Initial Exam Dates				
				Training & Initial Examination Non-Corporate Members	Training & Initial Examination Corporate Members	Initial Certification					
Magnetic Testing Level 1	Pre- and in-service	MT 1.1 Forging (f)	Training 4 days  Exam 1 day	R 16,100	R 15,000	R 2,500	Course Code	MT 1 A JHB 01	MT 1 A JHB 02	MT 1 A JHB 03	MT 1 A JHB 04
		Training					10 - 13 Feb	23 - 26 Jun	13 - 16 Oct	17 - 20 Nov	
		Exam					14 Feb	27 Jun	17 Oct	21 Nov	
Magnetic Testing Level 2	Pre- and in-service	MT 2.1 Forging (f)	Training 4 days  Exam 1 day	R 16,100	R 15,000	R 2,500	Course Code	MT 2 A JHB 01	MT 2 A JHB 02	MT 2 A JHB 03	
		Training					03 - 06 Mar	14 - 17 Jul	20 - 23 Oct		
		Exam					07 Mar	18 Jul	24 Oct		



# Visual Testing

## Course Information

Visual Testing (VT) stands out as one of the simplest yet most widely employed non-destructive testing (NDT) methods in use today. VT often takes precedence as the initial inspection step for any component or environment, as it necessitates direct observation of the area under scrutiny. This method primarily focuses on surface inspection, making it an essential tool in the NDT toolkit.

VT harnesses the power of visible light, falling within the 390 to 700 nm range of the electromagnetic spectrum, and its interaction with solid surfaces. This interaction allows for the detection of surface indications that are open and unobstructed, free from any foreign materials or debris. In essence, what is visible to the eye corresponds directly to what can be detected.

If your high school experiences with lenses and mirrors piqued your interest, or if the intrigue of lasers has captivated your imagination, then an exploration of the fundamental realm of NDT through Visual Testing is an invitation to embark on a journey that may transform you into the modern-day 'Sherlock Holmes' of visual inspection specialists—the most iconic of all times.

The VT Method encompasses three primary techniques, each tailored to the accessibility of the surface and the nature of the material being examined. These techniques include direct, indirect, and translucent methods, offering a versatile array of approaches to suit various testing scenarios.

Pursuing a course in VT not only introduces you to the foundational NDT method but also equips you with the skills and knowledge needed to meticulously examine and uncover hidden details, making it a vital discipline in ensuring the integrity and safety of critical components in numerous industries.



# Visual Testing

If you enjoyed working with lenses and mirrors in high school and if lasers fascinates you, then you are invited to attend a course in the most basic of all NDT methods and challenge you to become the next ‘Sherlock Holmes’ – certainly the most famous ‘visual testing specialist’ of all times.

The Visual Testing method can be divided into three main techniques depending on the access to the surface. The techniques are direct, indirect and translucent and depend on the type of material to be tested.

**The training course is based on general theory as well as sector specific applications relating, but not limited to, the following standards and specifications:**

- ASME Boiler & Pressure Vessel Code - Section V - Subsection A - Article 1 & 9
- ISO 3058 VT – Low power magnifiers
- ISO 8785 VT – Geometrical product specifications
- ISO 13385 Part 1 VT – Geometrical product specifications : Callipers
- ISO 13385 Part 2 VT – Geometrical product specifications : Calliper depth gauges
- ISO 11971 VT – Castings
- ISO 17637 VT – Welds

VISUAL TESTING - SAIW CERTIFICATION NDT SCHEME (ISO 9712)   NON-DESTRUCTIVE TESTING - SURFACE METHODS										
NDT Method and Level	Industrial Sector	Product Sector / Category	Duration 1 day = 8 hours	Prices (Inclusive of VAT)			Course & Initial Exam Dates			
				Training & Initial Examination Non-Corporate Members	Training & Initial Examination Corporate Members	Initial Certification				
Visual Testing Level 1	Pre- and in-service	VT 1.1 Forging (f)	Training 4 days  Exam 1 day	R 16,100	R 15,000	R 2,500	Course Code	VT 1 A JHB 01	VT 1 A JHB 02	VT 1 A JHB 03
		VT 1.2 Castings (c)					Training	13 - 16 Jan	05 - 08 May	29 Sept - 02 Oct
		VT 1.3 Welds (w)					Exam	17 Jan	09 May	03 Oct
Visual Testing Level 2	Pre- and in-service	VT 2.1 Forging (f)	Training 4 days  Exam 1 day	R 16,100	R 15,000	R 2,500	Course Code	VT 2 A JHB 01	VT 2 A JHB 02	
		VT 2.2 Castings (c)					Training	24 - 27 Mar	18 - 21 Aug	
		VT 2.3 Welds (w)					Exam	28 Mar	22 Aug	

# Radiographic Testing

## Course Information

Radiographic Testing (RT) harnesses the power of electromagnetic waves, specifically X-rays within the 0.01 to 10 nanometre range or Gamma-rays with wavelengths below 0.01 nanometres. Within these ranges, electromagnetic waves can proficiently penetrate solid materials, enabling the creation of detailed images either on film or by using electromagnetic sensors, providing valuable insights into the material's composition and integrity.

RT excels as a volumetric testing method, capable of identifying discontinuities exceeding a 2% cross-sectional void or material change in relation to the actual beam orientation. The energy levels associated with these extremely short waves exceed 100 electron volts (eV), but they pose a potential risk due to ionising radiation. It's crucial for operators to undergo radiation safety training, as this form of radiation is imperceptible to the senses—unseen, unheard, unfelt, untasted, and unscented. The aim is to maintain ALARA (As Low As Reasonably Achievable) exposure levels to minimise potential harm.

If you have an affinity for photography and hold Superman as your favourite DC character, Radiographic Testing offers a unique opportunity to explore your interests while making a substantial contribution to industry safety. However, it's essential to note that a solid foundation in exponents and logarithms is essential for mastering the intricacies of this NDT method.

Radiographic techniques within RT are diverse, contingent upon the type of electromagnetic wave employed, the configuration of exposure, and the image formation. By delving into RT, you not only combine the art of imaging with the pursuit of safety but also play a pivotal role in ensuring the structural soundness of critical components across various industries.



# Radiographic Testing

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**The training course is based on general theory as well as sector specific applications relating, but not limited to, the following standards and specifications:**

- ASME Boiler & Pressure Vessel Code - Section V - Subsection A - Article 1 & 2
- ASME Boiler & Pressure Vessel Code - Section V - Subsection B - Article 22
- ISO 10675 Part 1 & 2 RT - Acceptance levels
- ISO 17636-1 RT - X and gamma ray techniques
- ISO 19232 Parts 1 to 5 RT - Image quality of radiographs
- ISO 11699 Parts 1 & 2 RT - Industrial radiographic films
- ISO 5580 RT - Metallic materials using X- or gamma rays Basic rules
- ISO 5576 RT - Vocabulary

**Details of specific codes utilised in the limited (RT 2.Int) as well as derived or advanced techniques courses (RT 2.9) can be found in the relevant training documents.**

RADIOGRAPHIC TESTING - SAIW CERTIFICATION NDT SCHEME (ISO 9712)   NON-DESTRUCTIVE TESTING - VOLUMETRIC METHODS									
NDT Method and Level	Industrial Sector	Product Sector / Category	Duration 1 day = 8 hours	Prices (Inclusive of VAT)			Course & Initial Exam Dates		
				Training & Initial Examination Non-Corporate Members	Training & Initial Examination Corporate Members	Initial Certification			
Radiographic Testing Level 1 + RT Safety	Pre- and in-service	RT 1.5 X-Ray of Dense Alloy Welds	Training 20 days	R 46,300	R 42,800	R 2,500	Course Code	RT 1 A JHB 01	
		RT 1.6 Gamma-Ray of Dense Alloy Welds	Exam 5 days				Training	27 Jan - 14 Feb	
							Exam	17 - 21 Feb	
LIMITED Radiographic Interpreters Level 2	Pre- and in-service	Film Interpretation of Dense Alloy Welds Only (No operational RT)	Training 15 days	R 28,600	R 26,500	R 2,500	Course Code	RT 2 INT JHB 01	
			Exam 1 day				Training	05 - 15 May	
							Exam	16 May	
Radiographic Testing Level 2	Pre- and in-service	RT 2.5 X-Ray of Dense Alloy Welds	Training 10 days	R 38,400	R 35,500	R 2,500	Course Code	RT 2 A JHB 01	RT 2 A JHB 02
		RT 2.6 Gamma-Ray of dense Alloy Welds	Exam 5 days				Training	10 - 24 Mar	21 Jul - 01 Aug
							Exam	25 - 27 Mar	04 - 06 Aug
ADVANCED see point (1)	Pre- and in-service	RT 2.9 Digital Radiography	Training 10 days  Exam 5 days	R 38,400	R 35,500	R 2,500	Please refer to our website for more information		
* other categories available on request and subject to demand. [1] RT 2 A CERTIFICATION IS REQUIRED AS PREREQUISITE									



# Ultrasonic Testing

## Course Information

Ultrasonic Testing (UT) is a powerful non-destructive testing (NDT) method that relies on the mechanical vibration of sound waves in the ultrasonic range (frequencies greater than 20 kHz) to uncover volumetric discontinuities within solid materials. In UT, both compression and shear waves play a pivotal role in investigating the internal nature of components. The interaction of these waves with linear, planar, or volumetric anomalies, often referred to as 'vacancies,' enables the characterization of any detected discontinuities.

The primary inspection medium in UT is the sound beam, and a profound understanding of its qualification (properties) and quantification (calibration) is crucial for accurately interpreting signal responses. If you're someone who enjoys playing pool, possesses a penchant for geometry and trigonometry, and relishes the challenge of deciphering complex structures, then embarking on an Ultrasonic Testing course is a transformative experience. It will revolutionise the way you perceive engineering materials and weldments, offering you a unique perspective into their internal composition.

Within UT, compression and shear waves applications having various angles and frequencies serve as the foundation for determining the techniques used. Additionally, the send-or-receive/send-and-receive capabilities of the sensors, along with scanning methodologies such as the tandem technique, are vital technique parameters. Mastering these parameters empowers you to not only detect defects but also to assess their size, orientation, and position accurately.

Delving into UT opens doors to a fascinating world where science, mathematics, and technology converge to ensure the safety and reliability of critical components in various industries. It's a discipline that empowers you to become a vital guardian of structural integrity, making it a rewarding and intellectually stimulating choice for those passionate about NDT.



# Ultrasonic Testing

**The training course is based on general theory as well as sector specific applications relating, but not limited to, the following standards and specifications:**

- ASME Boiler & Pressure Vessel Code - Section V - Subsection A - Article 1, 4 & 5
- ASME Boiler & Pressure Vessel Code - Section V - Subsection B - Article 23
- ISO 16810 UT – General Principles
- ISO 11666 UT – Acceptance Levels
- ISO 17640 UT – Techniques, Testing levels and assessment
- ISO 23279 UT – Characterisation of discontinuities in welds
- ISO 5577 UT – Vocabulary
- ISO 18175 UT – Performance characteristics (no electronic instruments)
- ISO 16827 UT – Characterisation and sizing of discontinuities
- ISO 16826 UT – Discontinuities perpendicular to the surface
- ISO 16811 UT – Sensitivity and range
- ISO 12710 UT – Evaluating electronic characteristics of UT instruments
- ISO 10375 UT – Characterisation of search unit and sound field
- ISO 7963 UT – Calibration block No 2
- ISO 4992 Parts 1 & 2 UT – Steel castings
- ISO 2400 UT – Calibration block No 1
- ISO 22232 Parts 1/3 UT – Equipment characterisation

**Details of specific codes utilised in the limited (UT 1.WT) as well as derived or advanced techniques courses (UT 2.7; 2.8; 2.9; 2.10 and 2.11) can be found in the relevant training documents.**



# Ultrasonic Testing

ULTRASONIC TESTING - SAIW CERTIFICATION NDT SCHEME (ISO 9712)   NON-DESTRUCTIVE TESTING - VOLUMETRIC METHODS												
NDT Method and Level	Industrial Sector	Product Sector / Category	Duration 1 day = 8 hours	Prices (Inclusive of VAT)			Course & Initial Exam Dates					
				Training & Initial Examination Non-Corporate Members	Training & Initial Examination Corporate Members	Initial Certification						
LIMITED Ultrasonic Testing Level 1 Limited – Wall Thickness	Pre- and in-service	Limited to wall thickness measurement using compression probe only	Training 4 days Exam 1 day	R 16,100	R 15,000	R 2,500	Course Code	UT 1 WT JHB 01	UT 1 WT JHB 02	UT 1 WT JHB 03	UT 1 WT JHB 04	UT 1 WT JHB 05
							Training	27 - 30 Jan	31 Mar - 03 Apr	21 - 24 Jul	08 - 11 Sep	03 - 06 Nov
							Exam	31 Jan	04 Apr	25 Jul	12 Sep	07 Nov
Ultrasonic Testing Level 1	Pre- and in-service	UT 1.1 Wrought Product/ Forgings UT 1.2 Castings UT 1.3 Butt Welds in Plate UT 1.4 Butt Welds in Pipe	Training 12 days Exam 3 days	R 38,400	R 35,500	R 2,500	Course Code	UT 1 A JHB 01	UT 1 A JHB 02			
							Training	24 Feb - 11 Mar	25 Aug - 09 Sep			
							Exam	12 - 14 Mar	10 - 12 Sep			
Ultrasonic Testing Level 2	Pre- and in-service	UT 2.1 Wrought Product/ Forgings UT 2.2 Castings UT 2.3 Butt Welds in Plate UT 2.4 Butt Welds in Pipe UT 2.5 T-joints & other configurations UT 2.6 Nozzles	Training 12 days Exam 3 days	R 38,400	R 35,500	R 2,500	Course Code	UT 2 A JHB 01				
							Training	12 - 27 May				
							Exam	28 - 30 May				
AD-VANCED	Pre- and in-service	UT 2.10 Ultrasonic Phased Array	Training 12 days Exam 5 days	R 41,700	R 38,600	R 2,500	Please refer to our website for updates relating to advanced / derived techniques.					
PLEASE NOTE: ADVANCED OPTIONS UT 2.8 - CRITICAL FLAW SIZING; UT 2.9 - AUSTENITIC STAINLESS STEEL AND UT 2.11 - TIME OF FLIGHT DIFFRACTION ARE AVAILABLE ON REQUEST AND SUBJECT TO DEMAND. [1] UT 2 A CERTIFICATION IS REQUIRED AS PREREQUISITE												







# Eddy Current Testing

## Course Information

Eddy Current Testing (ECT) is a highly effective electromagnetic testing method that leverages electromagnetic induction to detect and assess discontinuities in materials. A fundamental prerequisite for eddy current testing is that the material being examined, or in the case of paint thickness measurement, the substrate, must be electrically conductive.

ECT serves as a versatile testing method, offering both surface and subsurface inspection capabilities. The depth to which inspections can be carried out effectively hinges on several factors, including the frequency of the excitation current, the electrical conductivity, and the magnetic properties of the material under scrutiny. While this may seem complex, it all boils down to principles you may recall from your high school lessons on electrical transformers.

If the world of electromagnetic induction intrigues you, dust off your high school knowledge and embark on an ECT course. It's a journey that promises to deepen your understanding and expertise in this captivating field.

Eddy current testing techniques are adaptable, depending on the nature of the sample being tested, be it a flat surface, tube, bar, or more intricate shapes. The choice of probe is influenced by this, and it plays a pivotal role in the testing process. Additionally, the utilisation of multiple frequencies and inspection modes, such as absolute or differential, determines the specific multi-frequency and/or mode techniques used.

The presence of factors like magnetic saturation, weak magnetic alloys, shielding, or the focusing nature of the probe, as well as the capabilities of the display system, contribute to the comprehensive description of eddy current testing techniques. By delving into ECT, you're not only exploring the intriguing world of electromagnetic induction but also contributing to the safety and quality assurance of materials in various industries.



# Eddy Current Testing

**If this sounds like a mouthful, then we invite you to dust off your high school knowledge regarding electrical transformers and attend an ECT course.**

The techniques utilised in eddy current testing depends on the sample being tested, i.e. whether it is a surface, tube, bar or other more complex shapes since it dictates the type of probe to be used. Furthermore, the number of frequencies and the inspection mode(s), such as

absolute or differential, determines the multi- frequency and / or mode technique description. The presence of magnetic saturation, weak magnetic alloys, shielding or focussing nature of the probe as well as the display capabilities extends the technique description.

**The training course is based on general theory as well as sector specific applications relating, but not limited to, the following standards and specifications:**

- ASME Boiler & Pressure Vessel Code - Section V - Subsection A - Article 1 & 8
- ASME Boiler & Pressure Vessel Code - Section V - Subsection B - Article 26
- ISO 15549 ECT – General principles
- ISO 15548 Part 1 ECT – Instrument Characteristics and verification
- ISO 15548 Part 2 ECT – Probe Characteristics and verification
- ISO 15548 Part 3 ECT – System Characteristics and verification
- ISO 17643 ECT – Welds
- ISO 2360 ECT - Non-Conductive coatings – Amplitude sensitive equipment
- ISO 21968 ECT - Non-Conductive coatings – Phase sensitive equipment
- ISO 12718 ECT - Vocabulary

EDDY CURRENT TESTING – SAIW Certification ndt scheme (iso 9712) non-destructive testing – surface method									
NDT Method and Level	Industrial Sector	Product Sector / Category	Duration 1 day = 8 hours	Prices (Inclusive of VAT)			Course & Initial Exam Dates		
				Training & Initial Examination Non-Corporate Members	Training & Initial Examination Corporate Members	Initial Certification			
Eddy Current Testing Level 1	Pre- and in-service	ECT 1.1: Surface (s)	Training 4 days	ECT 1.1 R 16,100	ECT 1.1 R 15,000	ECT 1.1 R 2,500	Course Code	ECT 1.1 JHB 01	ECT 1.2 JHB 01
		ECT 1.2: Tubes (t)	Exam 1 day	ECT 1.2 R 16,100	ECT 1.2 R 15,000	ECT 1.1 R 2,500	Training	02 - 05 Jun	30 Jun - 03 Jul
							Exam	06 Jun	04 Jul
Eddy Current Testing Level 2	Pre- and in-service	ECT 2.1: Surface (s)	Training 4 days	ECT 2.1 R 16,100	ECT 2.1 R 15,000	ECT 2.1 R 2,500	Course Code	ECT 2.1 JHB 01	ECT 2.2 JHB 01
		ECT 2.2: Tubes (t)	Exam 1 day	ECT 122 R 16,100	ECT 2.2 R 15,000	ECT 2.1 R 2,500	Training	07 - 10 Apr	11 - 14 Aug
							Exam	11 Apr	15 Aug

# Replica Metallography

## Course Information

Metallographic inspections play a key role in determining the remaining life assessment, creep life of pressure vessels, pipelines, power plants and in verifying the material and heat treatment of fabricated equipment.

In those instances, destructive metallographic tests are unsuitable as further usability of the component is required. Replica metallographic technique is an in-situ, non-destructive technique to reveal the microstructure of components.

The usual method of metallographic investigation involves cutting pieces from the component so that laboratory preparation and examination can be performed. However, in replica metallography, after proper surface preparation through the use of cellulose acetate sheets, the technician makes a copy (for this reason it is called “replica”) of the microstructure of the metal surface, which will be examined using an optical microscope. The four day course on replica metallography will give an insight into the different types of materials, importance of metallography, and how to do lab metallography and replica metallography. On successful completion of the course, the candidate will be a competent replica technician. Evaluation of the metallographs is undertaken by a qualified metallurgist.

[www.saiw.co.za](http://www.saiw.co.za)

Please refer to contacts on page 26

Scan to download the SAIW  
Course Prospectus App onto  
your cellular phone.





# Replica Metallography

**Course duration:** 3 days + 1 day exam

**PRICING (Including VAT)**

Corporate Member **R 12,200**      Non-Corporate Member **R 13,400**

JOHANNESBURG		
	HRS	JHB 1
<ul style="list-style-type: none"><li>• Principles of metallography</li><li>• Similarities and differences between on-site and laboratory surface preparation</li><li>• Etching of samples/surfaces and importance of time and temperature</li><li>• Placement of acetate film and final transfer to optical slide</li><li>• Importance of proper identification of replicated area</li></ul>	24	18 - 20 Aug
Examination	Theory - 2 hrs + Prac - 4 hrs	21 Aug





LEVEL 3 ELIGIBILITY PRACTICAL EXAMINATIONS	
MT Level 2	On request
PT Level 2	On request
RT Level 2	On request
UT Level2	On request

NON-DESTRUCTIVE TESTING – LEVEL 3 – BASIC & MAIN METHODS   SAIW CERTIFICATION NDT Level 3 – ISO 9712								
NDT Method and Level	Industrial Sector	Product Sector / Category	Duration  1 day = 8 hours	Prices (Inclusive of VAT)			Course & Initial Exam Dates	
				Training & Initial Examination Non-Corporate Members	Training & Initial Examination Corporate Members	Initial Certification		
NDT Level 3: Basic	Pre- and in-service	Part A: Materials & Processes Part B: Qual & Cert Schemes Part C: NDT Level 2	Training 10 days  Exam 1 day	R 29,000	R 28,400	R 2,500	Course Code	NDT 3 A JHB 01
							Training	TBA
							Exam	TBA
Magnetic Testing: Level 3 (Main Method)	Pre- and in-service	Part D: (Gen) + Parts E1 & E2 (Specific + codes) + Part F (Procedure) Forgings (f), Castings (c) & Welds (w)	Training 5 days  Exam 2 days	R 21,500	R 19,900	R 2,500	Course Code	MT 3 A HB 01
							Training	TBA
							Exam	TBA
Penetrant Testing: Level 3 (Main Method)	Pre- and in-service	Part D: (Gen) + Parts E1 & E2 (Specific + codes) + Part F (Procedure) Forgings (f), Castings (c) & Welds (w)	Training 5 days  Exam 2 days	R 21,500	R 19,900	R 2,500	Course Code	PT 3 A JHB 01
							Training	TBA
							Exam	TBA
Radiographic Testing: Level 3 (Main Method)	Pre- and in-service	Part D: (Gen) + Parts E1 & E2 (Specific + codes) + Part F (Procedure) Welds in Dense Alloys: X and Gamma	Training 5 days  Exam 2 days	R 21,500	R 19,900	R 2,500	Course Code	RT 3 A JHB 01
							Training	TBA
							Exam	TBA
Ultrasonic Testing: Level 3 (Main Method)	Pre- and in-service	Part D: (Gen) + Parts E1 & E2 (Specific + codes) + Part F (Procedure) Forgings (f), Castings (c) & Welds (w) - all categories	Training 5 days  Exam 2 days	R 21,500	R 19,900	R 2,500	Course Code	UT 3 A JHB 01
							Training	TBA
							Exam	TBA
PLEASE NOTE: EdDy Current TESTING & VISUAL TESTING LEVEL 3 ARE AVAILABLE ON REQUEST AND SUBJECT TO DEMAND.								

RE-WRITES	
Basic/MT/PT	On request
Basic/MT/PT/RT/UT	On request

NON-DESTRUCTIVE TESTING CPD COURSES						
Course Name	Details	Duration 1 day - 8 hours	Prices (Inclusive of VAT)		Course & Initial Exam Dates	
			Training & Initial Examination Non-Corporate Members	Training & Initial Examination Corporate Members		
ASME - Eddy Current Testing Code Application	Refer to website for list of applicable sections covered	Training   2 days Exam N/A - Assignments	R 7,290	R 6,800	Course Code	ASME - ECT - JHB 01
					Training	On request
					Exam	N/A
ASME - Liquid Penetrant Testing Code Application	Refer to website for list of applicable sections covered	Training   2 days Exam N/A - Assignments	R 7,290	R 6,800	Course Code	ASME - PT - JHB 01
					Training	24 - 25 Mar
					Exam	N/A
ASME - Magnetic Particle Testing Code Application	Refer to website for list of applicable sections covered	Training   2 days Exam N/A - Assignments	R 7,290	R 6,800	Course Code	ASME - MT - JHB 01
					Training	26 - 27 Mar
					Exam	N/A
ASME - Visual Testing Code Application	Refer to website for list of applicable sections covered	Training   2 days Exam N/A - Assignments	R 7,290	R 6,800	Course Code	ASME - VT - JHB 01
					Training	On request
					Exam	N/A
ASME - Radiographic Testing Code Application	Refer to website for list of applicable sections covered	Training   2 days Exam N/A - Assignments	R 7,290	R 6,800	Course Code	ASME - RT - JHB 01
					Training	16 - 17 Apr
					Exam	N/A
ASME - Ultrasonic Testing Code Application	Refer to website for list of applicable sections covered	Training   2 days Exam N/A - Assignments	R 7,290	R 6,800	Course Code	ASME - UT - JHB 01
					Training	On request
					Exam	N/A
ISO - Eddy Current Testing Code Application	Refer to website for list of applicable sections covered	Training   2 days Exam N/A - Assignments	R 7,290	R 6,800	Course Code	ISO - ECT - JHB 01
					Training	On request
					Exam	N/A
ISO - Liquid Penetrant Testing Code Application	Refer to website for list of applicable sections covered	Training   2 days Exam N/A - Assignments	R 7,290	R 6,800	Course Code	ISO - PT - JHB 01
					Training	09 - 10 Jan
					Exam	N/A
ISO - Magnetic Particle Testing Code Application	Refer to website for list of applicable sections covered	Training   2 days Exam N/A - Assignments	R 7,290	R 6,800	Course Code	ISO - MT - JHB 01
					Training	29 - 30 Apr
					Exam	N/A
ISO - Visual Testing Code Application	Refer to website for list of applicable sections covered	Training   2 days Exam N/A - Assignments	R 7,290	R 6,800	Course Code	ISO - VT - JHB 01
					Training	On request
					Exam	N/A
ISO - Radiographic Testing Code Application	Refer to website for list of applicable sections covered	Training   2 days Exam N/A - Assignments	R 7,290	R 6,800	Course Code	ISO - RT - JHB 01
					Training	On request
					Exam	N/A
ISO - Ultrasonic Testing Code Application	Refer to website for list of applicable sections covered	Training   2 days Exam N/A - Assignments	R 7,290	R 6,800	Course Code	ISO - UT - JHB 01
					Training	23 - 24 Apr
					Exam	N/A



### **JOHANNESBURG CAMPUS**

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