



The course is suitable for all NDT personnel, inspectors and technicians engaged in or responsible for weld inspection, inspection of castings and forgings during fabrication or in-service inspection.

This eLearning training is part of the **'blended learning'** Magnetic Testing and Penetrant Testing package; **a mix of eLearning and in-class practical training followed by certification to EN ISO 9712 for both methods.** The online modules can be studied when and where it is most convenient and at your own pace.

The package **separates the learning of theoretical concepts from the practical application of the methods**, coupled with questionnaires focused on the theoretical principles and specific applications related to different product and industrial sectors.

In addition to the eLearning element of the methods, students will then attend practical classroom training and certification exams in one week.

Note for candidates wishing to enrol on the MT-PT blended learning course:

The e-learning modules require time to study. **All students need to plan their study time and complete the online modules (including all assessments) before joining the classroom.**

It is a mandatory requirement to issue access to the online material **no less than 30 calendar days** prior to the commencement of the in-class element of the course. There shall be no exception to this requirement, please plan your study to embrace this requirement.

What will I learn?

eLearning

The Magnetic Testing/Penetrant Testing Combined Level 2 eLearning training course consists of **three main modules, to be studied in the order below.**

Module 1: Product Technology

- **Lesson 1 - Common Discontinuities:** Describes the main types of discontinuities that can occur in metallic products
- **Lesson 2 - Basic Steel Metallurgy:** Basic insight into the metallurgy of steel, and how its mechanical properties can be modified by alloying and heat treatment
- **Lesson 3 - Steel Making:** Follows the steel making process, from the blast furnace to the preparation of steel for casting
- **Lesson 4 - Casting:** Outlines some common methods that are used to cast metals, and the types of defects that can occur
- **Lesson 5 - Wrought Products:** Outlines some common wrought processes, and the types of defects that can occur
- **Lesson 6 - Welding:** Outlines the main arc welding processes, features of a weld, and types of welding defects

Module 2: Magnetic Testing Theory

- **Lesson 1 - Principles of MT:** The basic principles of magnetism and how magnetic particle testing works
- **Lesson 2 - Methods of Magnetisation:** The portable and fixed equipment that is used to magnetise test specimens
- **Lesson 3 - MT Detecting Media and Equipment:** Describing the inks, powders and other equipment that is used in the MT process
- **Lesson 4 - MT Techniques:** Outlines the techniques, current waveforms and demagnetisation methods used in MT
- **Lesson 5 - Assessing Magnetising Force and Amperage:** Outlines the methods used to assess whether magnetising force and amperage is adequate for the magnetising method used

Module 3: Penetrant Testing Theory

- **Lesson 1 - Principles of PT:** The basic principles how penetrant testing works, and the properties required of an effective penetrant
- **Lesson 2 - PT Process and Parameters:** Describes each stage of the PT process, looking at the different methods that can be used and the various parameters involved
- **Lesson 3 - Penetrant Systems and Inspection:** Outlines how penetrant systems are classified, selected and inspected
- **Lesson 4 - PT Control Checks and Documentation:** Outlines the process control tests, checks, and calibration of equipment that ensure quality control in penetrant testing systems



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Each module contains:

- Downloadable course notes
- Pages explaining the underlying theory
- Self-assessment questionnaires
- A coursework section with questions on general and specific theory
- A personal tutor assigned to each certification candidate

At the end of your online training phase, by completing the coursework section you will automatically receive your results, which will indicate whether you are ready for the classroom element of the course, or if you need further time to study.

Classroom

In addition to the eLearning element of the Magnetic Testing and Penetrant Testing, students will then attend practical classroom training, covering the practical aspects of the methods followed by certification exam in both methods in one of TWI training facilities.

Training is in accordance with the requirements of BS EN ISO 9712 and the course ends with the certification examination.

What Will I leave with?

By the end of the course, you should be able to:

- Explain the basic principles of magnetic particle/penetrant inspection methods
- Carry out magnetic particle inspection/penetrant inspection
- Write clear and concise inspection instructions and test reports
- Meet syllabus requirements for CSWIP and PCN

Certification



FAQ

How soon can a learner receive materials prior to sitting an exam?

For the online training materials, once they have payed, they will be given a link and a password which will be allocated by UK staff. All of the materials are contained on our virtual academy which they may download.

What happens when you book on this blended learning course?

When you have booked your online training, you will receive an email notification with your login details. In addition, one of TWI lecturers will be assigned to each certification candidate to support them and advise them during their study time. You will then have 30 days from first login to complete your eLearning course or until the examination date.

If there is more than 30 days between the completion of the online element and the classroom attendance, the material you have studied prior to attending the course will become available again for a further period of 15 days and remain available until the certification examination so that you can get yourself ready before coming to one of our training centres.

What do I need to bring with for the exam?

- Vision certificate (reading a minimum of Times Roman N4.5, or equivalent type and size letters, at not less than 300mm on a standard test chart for near vision, in at least one eye, corrected or uncorrected) Please use the Vision Test attached.
- 2 passport size photographs (signature behind).



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Entry Requirements

No mandatory course entry requirements.

Training requirements

The minimum required duration of training, which includes both theoretical and practical elements, is:

- Level 1 - 16 hours
- Level 2 - 24 hours (Direct Level 2 - 40 hours)

The training hours requirement is fulfilled when candidates attend one of TWI's training courses.

Certification requirements

The minimum duration for experience prior to or following success in the qualification examination is:

- Level 1 - 1 month
- Level 2 - 3 months (Direct Level 2 - 4 months)

Certification will not be issued until successful completion of the examination and the required experience is achieved.

Specifications

In order to fully access the distance learning material, you will need the following minimum system requirements:

- Latest version of your web browser of choice (if possible) will provide the best experience
- Recommended internet speed: at least 0.5 Mbps
- Display resolution: minimum 1024x768
- Ideal for use on desktops or tablet

BOOK NOW!

Classroom and Exam dates – Please refer to IQS CSWIP NDT Course Schedule

To enroll please complete and return pages 1 to 4 of enrolment form and return to: gadocs@iqsint.com or TWItraining@iqsint.com

For More information, please contact us on: TWItraining@iqsint.com

Office Tel: +27 (0)11 894 1987; (08h00-16h00) WhatsApp - 079 586 4581 (08h00-16h00)

Training Venues:

IQS JHB, 22 Dakota Road, Impala Park, Boksburg, 1459

IQS Cape Town, 31a Carlisle street, Paarden Eiland, Western Cape. 7420