COURSE OVERVIEW FE0771
Ultrasonic Testing Level-II Training & Certification
(ASNT SNT-TC-1A)

Course Title
Ultrasonic Testing Level-II Training & Certification *(ASNT, SNT-TC-1A)*

Course Date/Venue
July 21-25, 2025/Glasshouse Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE

Course Reference
FE0771

Course Duration/Credits
Five days (40 hours)/4.0 CEUs/40 PDHs

Course Description

This practical and highly-interactive course includes various practical sessions and exercises. Theory learnt will be applied using our state-of-the-art equipment.

This course is designed to provide participants the theory lectures and practical training with a preliminary understanding of Ultrasonic Testing (UT) as per the ASNT Recommended Practice No. SNT-TC-1A for Personnel Qualification and Certification in Nondestructive Testing.

Ultrasonic Testing (UT) uses high frequency sound energy to conduct examinations and make measurements. Ultrasonic inspection can be used for flaw detection/evaluation, dimensional measurements, material characterization, and much more. Although there are a number of technologies employing ultrasound, the simplest explanation of what happens in this method is that sound energy is introduced via a transducer and propagates through the materials in the form of waves. When there is a discontinuity (such as a crack) in the wave path, part of the energy will be reflected back from the flaw surface.

The reflected wave signal is transformed into an electrical signal by the transducer and is displayed or recorded in a variety of ways. Both surface and subsurface defects can be detected making ultrasonics a volumetric testing method. Applications vary in complexity from very small, hand-held manual units to very large, sophisticated automated systems.

This method is used to inspect a variety of product forms including castings, forgings, and weldments. The structural steel, automotive, petrochemical, power generation, and aerospace industries are a few examples that utilize ultrasonic inspection.

This course provides a review of basic ultrasonic theory, evaluation of weldments, innovative techniques to detect and evaluate discontinuities, equipment and advanced standardization methods.

Sample Questions for general examinations are presented in the separate question booklets that can be obtained from ASNT International Service Center. Participants will further demonstrate familiarity with and ability to operate the necessary equipment for UT, record and analyse the resultant information to the degree required as well as test flawed specimen and component and analyse the results of NDT as part of the practical training.

At the completion of the course, participants will be appearing for a Level II exam. Each candidate will be a *'Certified ASNT NDT Level II in Ultrasonic Testing'* upon successfully passing the examination with a minimum passing composite grade of at least 80 percent (%) which will be administered and graded by Haward Technology through its Certified ASNT Level-III instructors.

Course Objectives

Upon the successful completion of the course, each participant will be able to:-

- Get certified as a *"Certified ASNT NDT Level II in Ultrasonic Testing"*
- Review ultrasonic technique, principle of ultrasonic, equipment, testing techniques and standardization
- Evaluate base-material product forms that include ingots, plate, sheet, bar, rod, pipe, tubular products, forgings and castings
- Identify composite structures and other product forms as applicable - rubber, glass, etc.
- Evaluate weldments and apply welding processes and weld geometries
- Recognize the welding discontinuities, origin and typical orientation of discontinuities, response of discontinuities to ultrasound and applicable codes/standards
- Evaluate bonded structures through manufacturing processes, types of discontinuities, origin and typical orientation of discontinuities, response of discontinuities to ultrasound and applicable codes/standards
- Detect discontinuity and identify sensitivity to reflections, resolution, determination of discontinuity size, location of discontinuity
- Apply comparison procedures and object appraisal

Exclusive Smart Training Kit - H-STK®

*Participants +of this course will receive the exclusive "Haward Smart Training Kit" (**H-STK®**). The **H-STK®** consists of a comprehensive set of technical content which includes **electronic version** of the course materials conveniently saved in a **Tablet PC**.*

Who Should Attend

This course provides an overview of all significant aspects and considerations of ultrasonic testing in accordance with the ASNT international standard for all engineers and other technical staff working in the field of welding technology and quality assurance of welded joints using ultrasonic testing and in order to investigate material with such technique.

Exam Eligibility & Structure

Exam candidates shall have the following minimum pre-requisites:-

All Participants of this course must have Level I in UT before they can attend this Level II course

Initial Training & Experience Levels			
Level	Training Hours	Experience	
		Minimum Hours in UT Method	Total Hours in NDT
I	40	210	400
II	40	630	1200

A person may be qualified directly to NDT Level II with no time as a certified NDT Level I, providing the recommended training and experience consist of the sum of the hours recommended for NDT Level I and Level II.

Examinations Category & Criteria

Vision Examinations

- Near-Vision Acuity
    - This examination should ensure natural or corrected (no pharmacological agents) near-distance acuity in at least one eye such that the applicant is capable of reading a minimum of Jaeger Number 2 or equivalent type and size letter at the distance designated on the chart but not less than 12 inches (30.5 cm) on a standard Jaeger test chart. The ability to perceive an Ortho-Rater minimum of 8 or similar test pattern is also acceptable. This should be administered annually.
    - Pharmacological agents (eye drops) that would improve or enhance visual acuity at any distance shall not be used
- Color Contrast Differentiation
    - This examination should demonstrate the capability of distinguishing and differentiating contrast among colors or shades of gray used in the method as determined by the employer. This should be conducted upon initial certification and at five-year intervals thereafter
    - Vision examinations expire on the last day of the month of expiration

General (Written)

- This General examinations should address the basic principles of the applicable method
- In preparing the examinations, the NDT Level III should select or devise appropriate questions covering the applicable method and techniques described by the employer's written practice and the applicable elements of the outline in ANSI/ANT CP-105
- The minimum number of questions that should be given is 40
- A valid ACCP, ASNT NDT or ASNT 9712 Level II certificate may be accepted as fulfilling the General examination criteria for each applicable method if the NDT Level III has determined that the ASNT examinations meet the requirements of the employer's written practice. This acceptance should be documented

Specific (Written)

- This specific examination should address the equipment, operating procedures and NDT techniques that the individual may encounter during specific assignments described by the employer's written practice and the applicable elements of the outline in ANSI/ASNT CP-105
- The specific examination should also cover the procedures, specifications or codes and acceptance criteria used in the NDT conducted by the employer
- The minimum number of questions that should be given is 20
- A valid ACCP, ASNT NDT, or ASNT 9712 Level II certificate may be accepted as fulfilling the Specific examination criteria for each applicable method if the NDT Level III has determined that the ASNT examinations meet the requirements of the employer's written practice. This acceptance should be documented. If this assessment cannot be accomplished, an employer-administered Specific examination should be completed

Practical

- The candidate should demonstrate familiarity with and ability to operate the necessary NDT equipment, record and analyse the resultant information to the degree required
- At least one flawed specimen or component should be tested and the results of the NDT analysed by the candidate
  - Phased Array Ultrasonic Testing and Time of Flight Diffraction Practical Examination. Flawed samples used for practical examinations should be representative of the components and/or configurations that the candidates would be testing under this technique and approved by the NDT Level III
  - Film Interpretation Limited Certification. The Practical examination should consist of review and grading of a sufficient number of radiographs to demonstrate satisfactory performance to the satisfaction of the NDT Level III. The number of radiographs should be addressed in the employer's written practice
- The description of the specimen, the NDT procedure including checkpoints and the results of the examination should be documented
- Specimens. Proficiency should be demonstrated in selecting and performing the applicable NDT technique within the method and interpreting and evaluating the results on one or more flawed specimens as appropriate for the method and approved and documented by the NDT Level III (Grading Key).
- Evaluation. The candidate should detect all discontinuities and conditions specified and documented by the NDT Leve III. The written practice should address the acceptable detection rate as well as the maximum number of false calls acceptable.
- Grading. A checklist containing at least 10 different checkpoints requiring an understanding of NDT variables and the employer's procedural requirements should be included in this Practical examination. While it is normal to score the Practical on a percentile basis *(80% required),* the practical examination checklist should also contain a single checkpoint or multiple checkpoints that failure to successfully complete will result in failure of the examination. This requirement should be clearly marked on the checkpoint(s).
- A valid ACCP or ASNT 9712 Level II certificate may be accepted as fulfilling the Practical examination criteria for each applicable method if the NDT Level III has determined that the ASNT examinations meet the requirements of the employer 's written practice. This acceptance should be documented. If this assessment cannot be accomplished, an employer-administered Practical examination should be completed.
- An example of a Practical examination checklist is attached as Appendix A to this Recommended Practice. The example checklist has been provided as guidance on the development of practical examinations for any method and level.

Additional Criteria

All written examinations will be closed-book except that necessary data such as graphs, tables, specifications, procedures, codes, etc., may be provided during the examination. All questions are approved by the responsible NDT Level III.

Training Methodology

All our Courses are including **Hands-on Practical Sessions** using equipment, State-of-the-Art Simulators, Drawings, Case Studies, Videos and Exercises. The courses include the following training methodologies as a percentage of the total tuition hours:-

30% Lectures
20% Practical Workshops & Work Presentations
30% Hands-on Practical Exercises & Case Studies
20% Simulators (Hardware & Software) & Videos

In an unlikely event, the course instructor may modify the above training methodology before or during the course for technical reasons.

Accommodation

Accommodation is not included in the course fees. However, any accommodation required can be arranged at the time of booking.

Qualification Certificate(s)

(1) Internationally recognized Qualification Certificates will be issued to participants who have successfully completed the course and passed the exam at the end of the course. Successful candidate will be certified as a *"Certified ASNT NDT Level II in Ultrasonic Testing"*. Qualification Certificate is valid for 5 years.

Sample of Certificates

The following are samples of the certificates that will be awarded to course participants:-

Qualification Certificate

Haward Technology Middle East

This is to certify that

Waleed Al Habeeb

has met the established & published Requirements for Certification in accordance with ASNT SNT-TC-1A and the company's Written Practice as

NDT Level II

in the following Nondestructive Testing Methods:

Method	Product Form	Certificate No.	Issue Date	Expiry Date
Ultrasonic Testing Level II	All Forms	74851/01/FE0771/KSA/14.11.24	11/24	11/29

ASNT Level III Examiner
Mr. Talaat Mohamed (ASNT# 185107)
Signature & Stamp:

Mr. Jaryl Castillo
Academic Director

(2) Official Transcript of Records will be provided to the successful delegates with the equivalent number of ANSI/IACET accredited Continuing Education Units (CEUs) earned during the course.

Haward Technology Middle East

Continuing Professional Development (HTME-CPD)

CEU Official Transcript of Records

TOR Issuance Date: 14-Oct-22

HTME No. 7680-1842-8371-9060

Participant Name: Ahmed Al-Hajri

Program Ref.	Program Title	Program Date	No. of Contact Hours	CEU's
FE0771-IH	Ultrasonic Testing Level-II Training & Certification (ASNT's, SNT-TC-1A)	October 10-14, 2022	40	4.0

Total No. of CEU's Earned as of TOR Issuance Date **4.0**

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Jaryl Castillo
Academic Director

Haward Technology has been approved as an Authorized Provider by the International Association for Continuing Education and Training (IACET), 2201 Cooperative Way, Suite 600, Herndon, VA 20171, USA. In obtaining this approval, Haward Technology has demonstrated that it complies with the ANSI/IACET 1-2013 Standard which is widely recognized as the standard of good practice internationally. As a result of their Authorized Provider membership status, Haward Technology is authorized to offer IACET CEUs for programs that qualify under the ANSI/IACET 1-2013 Standard.

Haward Technology's courses meet the professional certification and continuing education requirements for participants seeking Continuing Education Units (CEUs) in accordance with the rules & regulations of the International Association for Continuing Education & Training (IACET). IACET is an international authority that evaluates programs according to strict, research-based criteria and guidelines. The CEU is an internationally accepted uniform unit of measurement in qualified courses of continuing education.

Haward Technology is accredited by

P.O. Box 26070, Abu Dhabi, United Arab Emirates | Tel.: +971 2 3091 714 | Fax: +971 2 3091 716 | E-mail: info@haward.org | Website: www.haward.org

Certificate Accreditations

Haward's certificates are accredited by the following international accreditation organizations: -

- British Accreditation Council (BAC)

  Haward Technology is accredited by the **British Accreditation Council** for **Independent Further and Higher Education** as an **International Centre**. Haward's certificates are internationally recognized and accredited by the British Accreditation Council (BAC). BAC is the British accrediting body responsible for setting standards within independent further and higher education sector in the UK and overseas. As a BAC-accredited international centre, Haward Technology meets all of the international higher education criteria and standards set by BAC.

- The International Accreditors for Continuing Education and Training (IACET - USA)

  Haward Technology is an Authorized Training Provider by the International Accreditors for Continuing Education and Training (IACET), 2201 Cooperative Way, Suite 600, Herndon, VA 20171, USA. In obtaining this authority, Haward Technology has demonstrated that it complies with the **ANSI/IACET 2018-1 Standard** which is widely recognized as the standard of good practice internationally. As a result of our Authorized Provider membership status, Haward Technology is authorized to offer IACET CEUs for its programs that qualify under the **ANSI/IACET 2018-1 Standard**.

  Haward Technology's courses meet the professional certification and continuing education requirements for participants seeking **Continuing Education Units** (CEUs) in accordance with the rules & regulations of the International Accreditors for Continuing Education & Training (IACET). IACET is an international authority that evaluates programs according to strict, research-based criteria and guidelines. The CEU is an internationally accepted uniform unit of measurement in qualified courses of continuing education.

  Haward Technology Middle East will award **4.0 CEUs** (Continuing Education Units) or **40 PDHs** (Professional Development Hours) for participants who completed the total tuition hours of this program. One CEU is equivalent to ten Professional Development Hours (PDHs) or ten contact hours of the participation in and completion of Haward Technology programs. A permanent record of a participant's involvement and awarding of CEU will be maintained by Haward Technology. Haward Technology will provide a copy of the participant's CEU and PDH Transcript of Records upon request.

Course Instructor(s)

This course will be conducted by the following instructor(s). However, we have the right to change the course instructor(s) prior to the course date and inform participants accordingly:

Mr. Talaat Mohamed, PGDip, BSc, is a **Certified Inspection Engineer** (**NDT-ASNT**) **& Certified Welding Inspector (CWI-AWS)** with **over 30 years** of extensive experience within the **Oil**, **Gas**, **Petrochemical**, **Petroleum** and **Refinery** industries. His thorough experience widely covers **Non-destructive Testing** in **Ultrasonic**, **Radiography**, **Penetrant**, **Magnetic Particle**, **Visual Testing** and **Welding Inspection**, **Radiation** Safety & Protection, **Radioactive** Waste Management, **Radiation** Protection Instrumentation, **Nuclear & Radiological** Safety, **Nuclear** Engineering, **Radiation**, Safe Handling. Further, he is also an expert in **Equipment Analysis & Piping Design**, **Welding**, **Corrosion & Risk Based Inspection**, **Fitness-for-Service Assessment**, **Boiler & Pressure Vessel**, **Fabrication**, Vibration, Heat Treatment, Inspection & Repair Procedures, Material **Damage Mechanism**, Material Failure Analysis, **Mechanical Integrity**, Isomerization, Distillation & Reforming Units, Pipelines, Pressure Piping, Stationary Equipment, **Tank Inspection**, Fired Boilers & Heaters, Heat Exchangers, Coolers, Pressure Vessels, Drums, Storage Tanks, Furnaces, Heaters, Pipelines, Columns, Reactors, Strippers and Safety Valves. He is also well-versed in UltraPIPE software, PCMS software and Lloyd's Register RBMI software as well as the API 571, API 510, API 572, API 570, API 653, API 560, Welding & Brazing Qualifications, API 573 and ASME B31.3 standards. He is currently the **Inspection General Manager** of Cairo Oil Refining Company (CORC) wherein he is responsible in developing the strategies for inspection and testing as well as designated as a certifying authority for ASNT-NDT levels certification according to SNT-TC-1A Personnel Qualification and Certification in Non-destructive Testing.

During his career life, Mr. Talaat has gained his practical and field experience through his various significant positions such as the **Inspection General Manager**, Technical Studies **Department Manager**, **Isomerization Inspection Department Manager**, **NDT & Inspection Section Head**, **Training Instructor**, **Technical Trainer**, **NDT Instructor**, **Inspection Engineer**, **QA/QC Team Leader** and **Team Leader** for numerous international companies like the Khalda Petroleum Company, Suez Oil Processing Co., Agiba Co., El-Nasr Petroleum Co., Suez Oil Co., General Petroleum Co., Petrobel Co., Egyptian Gas Co., Gulf Petroleum Co., as well as for Cairo Oil Refining Company, Welding Academy, GASCO and United Gas Derivatives Company.

Mr. Talaat has a **Bachelor** degree in **Mechanical Engineering** and a **Post-Graduate Diploma** in **Metallurgy & Material Engineering**. Further, he is a **Certified ASNT Level III NDT Inspector** in **Radiographic Testing** (**RT**), **Ultrasonic Testing** (**UT**), **Penetrant Testing** (**PT**), **Magnetic Particle Testing** (**MT**) and **Visual Non-destructive Testing** (**VT**); a **Certified Welding Inspector** (**CWI-AWS**), a **Certified Instructor/Trainer**; a **Certified Trainer/Assessor/Internal Verifier** by the **Institute of Leadership & Management** (**ILM**); and holds a certification in Quality Assurance, ISO 9000, API Heat Exchangers & Cooling Towers, Internal Quality System Auditing and Internal Quality System Auditing for ISO 9001/2000. Moreover, he is an active member of the American Society of Non-destructive Testing (**ASNT**), the Engineers Syndicate, the Society of Mechanical Engineers, the American Welding Society (**AWS**) and the Supreme Committee of Quality and delivered countless trainings, workshops and seminars worldwide.

Course Fee

US$ 6,000 per Delegate + **VAT**. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day

Course Program

The following program is planned for this course. However, the course instructor(s) may modify this program before or during the course for technical reasons with no prior notice to participants. Nevertheless, the course objectives will always be met:

Day 1: ***Monday, 21st of July 2025***

0730 – 0800	*Registration & Coffee*
0800 – 0815	*Welcome & Introduction*
0815 – 0830	***PRE-TEST***
0830 – 0930	***Review of Ultrasonic Technique Course*** *Principle of Ultrasonics ● Equipment*
0930 – 0945	*Break*
0945 – 1200	***Review of Ultrasonic Technique Course (cont'd)*** *Testing Techniques ● Standardization*
1200 – 1300	*Lunch*
1300 – 1400	***Evaluation of Base-Material Product Forms*** *Ingots ● Plate & Sheet ● Bar & Rod ● Pipe & Tubular Products*
1400 – 1415	*Break*
1415 – 1650	***Evaluation of Base-Material Product Forms (cont'd)*** *Forgings ● Castings ● Composite Structures ● Other Product Forms as Applicable - Rubber, Glass, etc.*
1650 – 1700	***Recap***
1700	*End of Day One*

Day 2: ***Tuesday, 22nd of July 2025***

0730 – 0930	***Evaluation of Weldments*** *Welding Processes*
0930 – 0945	*Break*
0945 – 1200	***Evaluation of Weldments (cont'd)*** *Weld Geometries*
1200 – 1300	*Lunch*
1300 – 1400	***Evaluation of Weldments (cont'd)*** *Welding Discontinuities*
1400 – 1415	*Break*
1415 – 1650	***Evaluation of Weldments (cont'd)*** *Origin and Typical Orientation of Discontinuities*
1650 – 1700	***Recap***
1700	*End of Day Two*

Day 3: ***Wednesday, 23rd of July 2025***

0730 – 0930	***Evaluation of Weldments (cont'd)*** *Response of Discontinuities to Ultrasound*
0930 – 0945	*Break*

0945 – 1200	***Evaluation of Weldments (cont'd)*** *Applicable Codes/Standards*
1200 – 1300	*Lunch*
1300 – 1400	***Evaluation of Bonded Structures*** *Manufacturing Processes*
1400 – 1415	*Break*
1415 – 1650	***Evaluation of Bonded Structures (cont'd)*** *Types of Discontinuities*
1650 – 1700	***Recap***
1700	*End of Day Three*

Day 4: ***Thursday, 24th of July 2025***

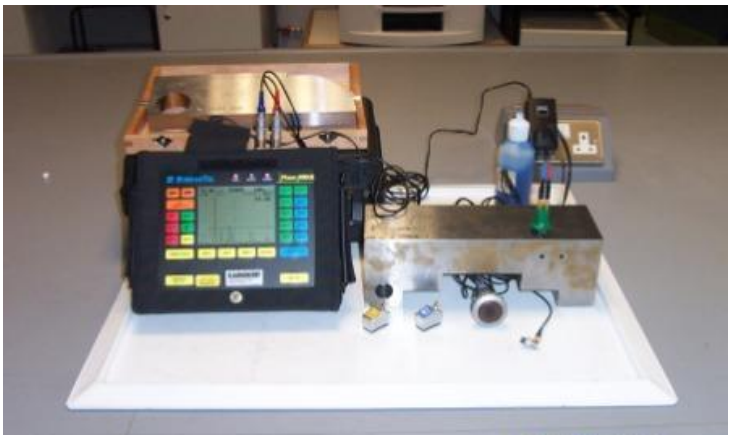
0730 – 0930	***Evaluation of Bonded Structures (cont'd)*** *Origin and Typical Orientation of Discontinuities ● Response of Discontinuities to Ultrasound*
0930 – 0945	*Break*
0945 – 1200	***Evaluation of Bonded Structures (cont'd)*** *Applicable Codes/Standards*
1200 – 1300	*Lunch*
1300 – 1400	***Discontinuity Detection*** *Sensitivity to Reflections ● Resolution*
1400 – 1415	*Break*
1415 – 1650	***Discontinuity Detection (cont'd)*** *Determination of Discontinuity Size ● Location of Discontinuity*
1650 – 1700	***Recap***
1700	*End of Day Four*

Day 5: ***Friday, 25th of July 2025***

0730 – 0830	***Evaluation*** *Comparison Procedures ● Object Appraisal*
0830 – 0845	*Break*
0845 – 0900	***Course Conclusion***
0900 – 1030	***Theoretical Examination***
1030 – 1200	***Theoretical Examination (cont'd)***
1200 – 1300	*Lunch*
1300 – 1500	***Practical Examination***
1500 – 1515	*Break*
1515 – 1600	***Practical Examination (cont'd)***
1645 – 1700	*Presentation of Course Certificates*
1700	*End of Course*

Practical Sessions

Practical sessions will be organized during the course for delegates to practice the theory learnt. Delegates will carryout NDT inspection using our "Ultrasonic Testing (UT) Equipment" and our specifically designed flawed specimen test components.



Ultrasonic Testing (UT) Equipment

Ultrasonic Testing Package USM 36

Flawed Specimen Test Components

Course Coordinator

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