



شركة ميرك العربية السعودية
MEIRC Saudi Arabia

NDT - Ultrasonic Testing (Level 2)

Introduction:

Non-Destructive Testing (NDT) is a branch of science and engineering which makes use of non-invasive techniques to determine the integrity of materials, components, structures. This course is designed to make an engineer fully-aware of what NDT is and how it should be managed in the design and the operations of a plan.

All certificates are approved in accordance with ASNT (American Society for Non-Destructive Testing)

Duration: **Level 2:** 10 training Days (General, Practical & Specific Examination)

Who Should Attend?

Engineers, inspectors and technicians aspiring to acquire the knowledge in Ultrasonic Testing.

Objective: On completion of the course, candidate will be able to:

- Professional operation of the Inspection Instrument
- Capability of results-analysis in comparison to International Standards
- Comprehensive understanding of the UT Theory
- calibrate a flaw detector with both straight beam and angle beam probes, record accurate thickness measurements and locate and size laminations in steel plate
- cover techniques and procedures for conducting ultrasonic testing of various products as per various codes and standards / procedures.

Course Outlines:

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| • Basic Principles | - Wave Propagation |
| • Modes of Sound waves | - Properties of Plane Waves |
| • Wavelength/Flaw Detection | - Elastic Properties of Solids |
| • Attenuation | - Acoustic Impedance |
| • Reflection/Transmission | - Refraction & Snell's Law |
| • Mode Conversion | - Signal-to-noise ratio |
| • Wave Interference | - Piezoelectric Transducers |
| • Characteristics of PT | - Transducer Beam Spread |
| • Transducer Types | - Transducer Testing |
| • Transducer Modeling | - Couplant |
| • Normal Beam Inspection | - Angle Beams |
| • Crack Tip Diffraction | - Automated Scanning |
| • Velocity Measurements | - Measuring Attenuation |
| • Spread Spectrum | - Signal Processing |
| • Flaw Reconstruction | - Calibration Methods |
| • DAC Curves | - Curvature Correction |
| • Grain Noise Modeling | |
| • References/Standards/Codes Application and measurement | |
| • ASME V (Level 2) | - AWS D1.1 (Level 2) |