

NDE SPECIALIST: NONDESTRUCTIVE EXAMINATION TECHNIQUES

Start Date:	27/07/2025	End Date:	31/07/2025
Categories:	Engineering & Maintenance	Venues:	Cairo
Formats:	In Person	Instructors:	

OVERVIEW

This technical course provides participants with an in-depth understanding of non-destructive examination (NDE) methods used to evaluate the integrity of materials, structures, and components without causing damage. It focuses on various NDE techniques, their applications, standards, and the critical role they play in quality assurance, maintenance, and safety in industries such as oil and gas, aerospace, manufacturing, and construction.

OBJECTIVES

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

- Understand the principles, advantages, and limitations of key non-destructive examination methods.
- Select appropriate NDE techniques based on material types, defect types, and operational conditions.
- Perform inspections using methods such as ultrasonic testing (UT), radiographic testing (RT), magnetic particle testing (MT), and liquid penetrant testing (PT).
- Interpret examination results in accordance with applicable standards and codes.
- Support quality assurance, preventive maintenance, and safety programs through effective application of NDE practices.

COURSE OUTLINE

1- Introduction to Non-Destructive Examination (NDE) Principles and Applications 2- Ultrasonic Testing (UT) and Radiographic Testing (RT) Techniques 3- Surface Examination Methods: Magnetic Particle (MT) and Liquid Penetrant (PT) Testing 4- Advanced NDE Techniques: Eddy Current Testing (ET) and Acoustic Emission Testing (AE) 5- Standards, Certification, Interpretation of Results, and Case Studies

TARGET AUDIENCE

NDE Technicians, Quality Control Inspectors, Welding Inspectors, Maintenance Engineers, Inspection Coordinators, Safety Officers, and professionals involved in asset integrity management, quality assurance, and structural evaluation.

METHODOLOGY

The course uses technical lectures, demonstrations of NDE equipment and techniques, hands-on

inspection workshops, defect interpretation exercises, real-world case studies, and group discussions to ensure practical skill development and theoretical understanding.

CONCLUSION

Upon completing the course, participants will have the technical knowledge and hands-on skills to perform non-destructive examinations, interpret findings accurately, and contribute to asset reliability, regulatory compliance, and operational safety across industries.

DAILY AGENDA

Day 1: Introduction to Non-Destructive Examination and Its Industrial Applications

Understand the importance of NDE, the principles behind non-destructive methods, and where NDE is critical in industry sectors.

Day 2: Ultrasonic Testing (UT) and Radiographic Testing (RT) Fundamentals

Learn the principles, applications, and limitations of UT and RT techniques, and practice interpreting typical inspection results.

Day 3: Surface Examination Techniques: Magnetic Particle and Liquid Penetrant Testing

Perform hands-on surface examinations using MT and PT methods to detect surface and near-surface discontinuities.

Day 4: Advanced NDE Techniques: Eddy Current and Acoustic Emission Testing

Explore emerging technologies and specialized NDE methods for high-precision inspections and structural health monitoring.

Day 5: NDE Standards, Certification, and Practical Case Studies

Review international standards (ASNT, ISO, API), certification pathways for NDE specialists, and analyze case studies of successful and failed inspections.

For more information, please contact us:

Email: info@gatewayconsulting.com | Phone: +96522968641

<https://gatewayconsulting.com>