

## MAGNETIC PARTICLE TESTING – Level I 16 hours (2 Days)

### COURSE DESCRIPTION

This 16 hours course is a preparatory course designed for personnel without prior experience in the method. The course provides a full appreciation in the techniques and method of magnetic particle testing. A high theory and practical content is offered. This course is designed to meet ANSI/ ASNT CP-105: "Topical Outlines for Qualification of Nondestructive Testing Personnel".

### COURSE TOPICAL OUTLINE

1. Principles of Magnets and magnetic Fields
2. Characteristics of Magnetic Fields
3. Effect of Discontinuities on Materials
4. Magnetization by Means of Electric Current
5. Selecting the Proper Method of Magnetization
6. Inspection Materials
7. Principles of Demagnetization
8. Magnetic Particle Testing Equipment
9. Types of Discontinuities Detected by Magnetic Particle Testing
10. Magnetic Particle Test Indications and Interpretations

### WHO SHOULD ATTEND

This course will benefit NDT personnel, maintenance personnel, Quality Assurance/ Quality Control Inspectors, engineers, surveyors, technicians, trainees in the aerospace, metal fabrication, oil refinery, petrochemical, offshore, shipbuilding, ship-repairing and building construction industries.

## MAGNETIC PARTICLE TESTING – Level II 24 hours (3 Days)

### COURSE DESCRIPTION

This 24 hours course covers all theory aspects of the method and provides 50% practical "hands-on" workshop experience of the various techniques. This course is designed to meet ANSI/ ASNT CP-105: "Topical Outlines for Qualification of Nondestructive Testing Personnel".

### COURSE TOPICAL OUTLINE

1. Principles
2. Flux Fields
3. Effects of Discontinuities on Materials
4. Magnetization by Means of Electric Current
5. Selecting the Proper Method of Magnetization
6. Demagnetization Procedures
7. Equipment
8. Types of Discontinuities
9. Evaluation Techniques
10. Quality Control of Equipment and Processes

### LEARNING OBJECTIVES

1. Basic principles and theoretical aspects of the magnetic particle test method
2. Applications of the magnetic particle test method
3. Types of discontinuities detected with the magnetic particle test method
4. Cause and effect of various types of discontinuities
5. Operational steps in the magnetic particle test and the importance of each step
6. Magnetic particle examination following a written procedure
7. Interpretation and evaluation of test results with respect to the applicable standards
8. Test reports and written procedure
9. Location of defects in various materials, components and structures with a high probability of detection

### WHO SHOULD ATTEND

This course will benefit NDT personnel, maintenance personnel, Quality Assurance/ Quality Control Inspectors, engineers, surveyors, technicians, trainees in the aerospace, metal fabrication, oil refinery, petrochemical, offshore, shipbuilding, ship-repairing and building construction industries.