

# Multimedia Courses on Non Destructive Testing (NDT)



- Browser-style Interface
- Interactive Text , Voice Guide
- Interactive Animations
- Quick View
- Insights from Theory
- Tests and Video Clips

- Self-assesment Tests
- Statistics on Test Results
- Glossary and Text Search
- History and Bookmarking
- User Notes
- Interactive Help

Computer Based Training Courses for the level II Certification (EN ISO 9712 / ASNT)

The MULTIMEDIA COURSES are available  
on Flash memory or CD / DVD or downloaded

They are used by many and important:

- Training Centres as didactic materials  
in the Level II Certification Course
- Companies for training of personnel
- University and Institutes.



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# Multimedia Courses on Non Destructive Testing (NDT)

## TOPICS

### ULTRASONIC TESTING

1. Metallurgy of Steel
  - Prod. of Carbon Steels
  - Heat Treatments
  - Mechanical Tests
  - Types of Fracture
  - Steel Products
  - Study of Defects
2. Ultrasounds
  - Introduction
  - Types of Ultrasonic Waves
  - Parameters of Waves
  - Ultrasound Propagation
3. Test Instruments
  - Transducers
  - Ultrasound Equipment
  - Digital Flaw Detectors
4. Testing Methods and Techniques
  - Testing Methods
  - Testing Techniques
5. Instrument Calibration
  - System Calibration
  - Periodical Calibration Check
  - Characterization of Probes
  - Reference Blocks
6. Testing Operations
  - Piece Examination and Equipment Selection
  - Testing Procedure
  - Testing Techniques
  - Evaluation of Reflectors

### RADIOGRAPHIC TESTING

1. Metallurgy of Steel
  - Prod. of Carbon Steels
  - Heat Treatments
  - Mechanical Tests
  - Types of Fracture
  - Steel Products
  - Study of Defects
2. Principles of Physics
  - Structure of the Matter
  - Electromagnetic Waves
  - Electricity
3. Radioactivity and Radioprotection
  - Radioactivity
  - Radioprotection
4. Equipment and Techniques
  - Radiation Generators
  - Films
  - Image Quality
  - Exposure Factors
  - Radiographic Techniq.
  - Examples & Exercises
5. Radiographic Operations
  - Preliminary Analysis
  - Radiographic Inspection
  - Developing
6. Analysis and Interpretation
  - Analysis Instruments
  - Radiographic Marks
  - Radiograph Reading

### MAGNETIC PARTICLE TESTING

1. Metallurgy of Steel
  - Steel
  - Heat Treatments
  - Prod. of Carbon Steels
  - Study of Defects
2. Principles of Electrotechnics
  - Natural Magnetism
  - Electricity and Magnetism
  - Magnetic Properties of Matter
  - Electric Current
  - Standard Units
3. Magnetization Methods
  - Examination Principle
  - Criteria for the Examin.
  - Current-flow Method Techniques
  - Magnetic-field Method Techniques
  - Magnetizing Currents
4. Examination Equipment
  - Magnetic Particles
  - Characteristic of the Particles
  - Lighting Lamps
  - Examination Equipment
5. Examination Procedure
  - Preliminary Activities
  - Practical Rules for Magnetization
  - Checking the Magnetizing Field
  - Sequence of Operations
  - Evaluation of the Test Results

### LIQUID PENETRANT TESTING

1. Metallurgy of Steel
  - Steel
  - Heat Treatments
  - Prod. of Carbon Steels
  - Study of Defects
2. Method Principles
  - Penetrants & Developers
  - Light Sources
3. Examination Procedure
  - Preliminary Activities
  - Selection of Method and Type of Liquid
  - Examination Operations
  - Leakage Test
  - Procedure Qualification

### PHASED ARRAY / TOFD

1. Phased Array
  - Phased Array Technology
  - Phased Array Probe
  - Working Principles
  - Electronic Scanning
  - Beam Focusing
  - Signal Presentation
  - Calibrations
  - Characterizations of Defects
  - Application for Weld Inspect.
2. ToFD
  - Introduction to Techniques ToFD
  - Detection of Discontinuities
  - Limits and Additional Scans
  - ToFD System Calibration
  - ToFD Signal Analysis

### EDDY CURRENT TESTING

1. Metallurgy of Steel
  - Steel
  - Heat Treatments
  - Prod. of Carbon Steels
  - Study of Defects
2. Basic Physical Principles
  - Electricity
  - Magnetism
  - Electromagnetism
  - Measurement units
3. Method Principles
  - Eddy current method
  - Eddy current properties
  - Factors affecting Eddy Curr.
  - Impedance changes
  - Impedance diagrams
4. Examination Equipment
  - Examination system
  - Probes
  - Instruments
  - Reference standards
5. Examination Procedure/ Results
  - Surface inspections
  - Welding inspection
  - Tube inspections (internal)
  - Tube/bar inspections (external)
  - Measuring thickness
  - Measuring conductivity

### VISUAL TESTING

1. Metallography / Defects
  - Manufacturing Defects
  - Welding Defects
  - Service Induced Defects
  - Metallography

2. Optical and Photometry
  - Physiology of Vision
  - Optical Principles
  - Photometry
3. Equipment and Tools
  - Measuring Instruments
  - Temperature Indicators
  - Vision Tools / Endoscopes

4. Basic Principles
  - Examination Procedures
  - Basic Principles of Exam.
  - Safety Aspect
5. Visual Inspections
  - Steel products
  - Welded joints
  - Connection elements
  - Tubes/Valves/Pumps

6. Examples of Visual Inspection
  - Inspection in automotive industry
  - Inspection of oil tanks
  - Visual inspection of steel bridges
  - Automotive industry
  - Power Generation and plant
  - Aerospace
  - Building and Construction



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