

NOC: Theory and Practice of Non Destructive Testing - Video course

COURSE OUTLINE

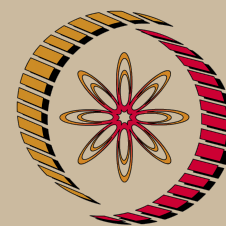
Nondestructive Testing (NDT) plays an extremely important role in quality control, flaw detection and structural health monitoring covering a wide range of industries. There are varieties of NDT techniques in use. This course will first cover the fundamental science behind the commonly used NDT methods to build the basic understanding on the underlying principles. It will then go on to cover the process details of each of these NDT methods.

COURSE DETAIL

Week. No.	Topics
Week 1	Introduction to NDT, Visual Optical methods, Dye penetrant testing, Basic principle, Types of dye and methods of application, Developer
Week 2	Magnetic particle testing, Basic theory of magnetism, Magnetization methods, Field indicators, Particle application, Inspection.
Week 3	Eddy current testing, Basic principle; Faraday's law, Inductance, Lenz's law, Self and Mutual Inductance, Impedance plane, Inspection sy
Week 4	Ultrasonic testing: Basics of ultrasonic waves, Pulse and beam shapes, Ultrasonic transducers.
Week 5	Test method, Distance and Area calibration, Weld inspection by UT.
Week 6	Acoustic emission testing: Basic principle, Sources of acoustic emission, Source parameters, Kaiser-Felicity theory, Equipment and Data
Week 7	Radiography: X-rays and their properties, X-ray generation, X-ray absorption and atomic scattering.
Week 8	Image formation, Image quality, Digital Radiography, Image interpretation, Radiation Shielding. Comparison and selection of NDT methods,

References:

1. Nondestructive Testing, Louis Cartz, ASM International
2. Nondestructive Evaluation and Quality Control, ASM Handbook, Vol. 17.
3. <https://www.nde-ed.org>



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