

NON DESTRUCTIVE TESTING AND ULTRASONIC INSTRUMENTATION

Code : EI 604C

Contacts : 3L

Credits : 3

Module I

Introduction and importance of NDT. General Principles and Basic Elements of NDT. [2]

Surface feature inspection and testing : General, Visual, Chemical, and Mechanical [4]

Magnetic-magnetization, flux, and Electro potential, Electrical resistivity, Electromagnetic-eddy current techniques. [5]

Module II

Ultrasonic waves, principle of propagation [2]

Ultrasonic Test methods:

Echo, Transit time, Resonance, Direct contact and immersion types [5]

Module III

Ultrasonic methods of measuring thickness, depth, flow, level etc.

Various parameters affecting ultrasonic testing and measurements, their remedy [8]

Ultrasonic in medical diagnosis and therapy [4]

Books:

1. Mcluthe p (Ed) – NDT Handbook, American Society for NDT, 1989.
2. Hull B and John V – Non Destructive Testing, FI BS/McMillan.
3. Krantkramer - Ultrasonic Testing of materials, Springer 2005
4. Handbook of Nondestructive Testing, Mc Graw Hill, 1998
5. U. Schnars, W. Jeuptner - Digital Holograpy, Springer, 2005
6. W. J. Price – Nuclear radiation Detection, Mc Graw Hill, New York, 1958
7. Krauthsamer J and Krauthsamer H – Ultrasonic Testing of Materials, Springer Verlag, Berlin, New York.
8. Wells N T – Biomedical Ultrasonics, Academic Press, London 1977.