



# GUJARAT TECHNOLOGICAL UNIVERSITY

Bachelor of Engineering (Minor/Honours Degree Syllabus)

Subject Code : N116AR02

Subject Name : NDT Techniques - IV (ECT, Advanced NDT)

WEF Academic Year :	2025-26
Semester :	6
Category of the Course :	Compulsory

## Course Scheme :

Teaching Scheme			Total Credits	Assessment Pattern and Marks				Total Marks
L	T	PR	C	Theory		Practical		
				ESE (E)	PA(M)	ESE (V)	PA (I)	
02	00	02	03	70	00	30	00	100

## Course Content :

Unit No	Course Content	No. of Hours	% of Weightage	Mapped CO
1	Electrical methods of NDT-Conductivity & resistivity methods and their applications. Eddy current testing: Principle, instrument, techniques, sensitivity, application, limitation, Thermal methods of NDT.	10	36	1, 2
2	Study of advanced methods of NDT like holography, tomography, MRI etc.	06	22	3
3	Selection of NDT methods: Case studies, Reliability in NDT.	12	42	3
<b>Total</b>		<b>28</b>	<b>100</b>	

## Course Outcome :

No.	Course Outcomes	RBT Level*
01	To learn the principles, working and applications of Eddy current testing.	UN/AP/AN
02	Inspect different metals and alloys by Eddy current testing method.	AP/AN/EL
03	Select a non-destructive technique for a given problem / application and identify defects.	AP/AN/EL

\*RM: Remember, UN: Understand, AP: Apply, AN: Analyze, EL: Evaluate, CR: Create



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## Reference Books :

1. Practical Non-destructive Testing – Baldev Raj, T. Jayakumar & M. Thavasimuthu, 3rd Edition, Reprint 2019, Norosa Publishing House, New Delhi.
2. Treatise on Non-destructive Testing, Vol. 1,2 & 3 Edited by Dr. E.G. Krishnadas Nair, NDT Centre, HAL, Bangalore
3. Non-destructive test and evaluation of materials Jayamangal Prasad; C G Krishnadas Nair 2nd Edition, 2011,; Tata McGraw-Hill, New Delhi
4. Non-destructive testing, R. Halmshaw 2nd Edition, 1991, Butterworth-Heinemann Ltd.
5. Non Destructive Testing, Louis Cartz, 1995, ASM International, USA
6. Non-destructive testing, Warren J. McGonnagle, Gordon Breach, Science Publishers Ltd.
7. ASNT Level-II Study Guide

## List of Open-Source Software/learning website :

1. <http://nptel.iitm.ac.in/>
2. <https://www.nde-ed.org/>

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