NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI

Course Title	**Advance NDE Lab.**		
Course Code	PH608	**No. of Credits**	3
Department	Physics	**Faculty**	Dr. M. Ashok
Pre-requisites Course Code	**-NIL-**		
Course Coordinator(s) (if, applicable)	Dr. M. Ashok Dr. D. Sastikumar		
Course Teacher(s)/Tutor(s) E-mail	ashokm@nitt.edu sasti@nitt.edu	**Telephone No.**	04312503610 04312503604
Course Type	☑ **Core course** ☐ **Elective course**		

COURSE OVERVIEW

Fundamental of PA ultrasonic ToFD and its usage in the NDT. Methods of calibration of instrument and evaluation of signals. Other methods involved.

COURSE OBJECTIVES

To provide knowledge about the advanced NDT techniques and develop a strong practical skill for inspecting and evaluating components in accordance with industry specifications

COURSE OUTCOMES (CO)

Course Outcomes	**Aligned Programme Outcomes(PO)**
1. To have a better knowledge in the field of advanced techniques in ultrasonic NDE. 2. How to use TOFD technique. 3. To use the Thermography Inspect composite structures using IR camera. 4. Operate Phased array equipment for a effective defect detection 5. To differentiate various defect types and select the appropriate NDT method for inspecting the component using C Scan and Evaluate the A, B and C Scan profile using ultrasonic immersion testing	Knowledge on advance NDT methods used in industries, Hands on experience with advanced NDT equipment's Training on detection and analysis of the defects.

COURSE TEACHING AND LEARNING ACTIVITIES

S.No.	**Week**	**Topic**	**Mode of Delivery**
1	1-16	Phased Array calibration using IOW block TOFD inspection	Practical in Lab HAND on Training

		Weld inspection using Immerstion C- Scan Thermography 1) find the thickness 2) to find the Diffusivity Weld inspection using Ultrasonic Flaw detector	

COURSE ASSESSMENT METHODS

S.No.	Mode of Assessment	Week/Date	Duration	% Weightage
1	Assessment -1	4th week	1 hour	10%
2	Assessment -2	8th week	1 hour	20%
3	Assessment -3	12th week	1 hour	20%
4	Assessment -4 (Final)	End of Semester	3 Hours	50%

ESSENTIAL READINGS : Textbooks, reference books Website addresses, journals, etc

Text Books& Reference Books::

1. L. W. Schmerr, Fundamentals of Ultrasonic Phased Arrays, Springer, (2014)

2. Phased Array Testing: Basic Theory for Industrial Applications, Olympus NDT, (2004).

3. Introduction to Phased Array Ultrasonic Technology Applications, R/D Tech, (2004).

Website addresses :ndt.net

Journal:Journal of Non- Destructive Testing & evaluation.

COURSE EXIT SURVEY

Feedback from the student after 18thweek :on knowledge gained, subjects relevant to the course, methodology adopted, aspect of improvement. Whether the topics fulfill the course outcome and program outcome.

COURSE POLICY (including plagiarism, academic honesty, attendance, etc.)

Absenteeism in Assessment : Extra chances will be given to the students (on medical or official purpose) not appeared in any assessments

ADDITIONAL COURSE INFORMATION

The Course Coordinator is available for consultation at times that are displayed on the coordinator's office notice board. Queries may also be emailed to the Course Coordinator directly at ashokm@nitt.edu

FOR SENATE'S CONSIDERATION

- Sd -	**-sd-**	**-sd-**
Dr. M. Ashok		
Dr. D. Sastikumar		
Course Faculty	**CC-Chairperson**	**HOD**