DEPARTMENT OF MATALLURGICAL AND MATERIALS ENGINEERING

NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI

COURSE PLAN – PART I			
Course Title	**NON-DESTRUCTIVE TESTING**		
Course Code	**MT624**	**No. of Credits**	3
Course Code of Pre-requisite subject(s)	Nil		
Session	Jan 2018	**Section**	
Name of Faculty	Sivachittrambalam V	**Department**	MME
Email	sivav@nitt.edu	**Telephone No.**	9786778444
Name of Course Coordinator(s)	Sivachittrambalam V		
E-mail	sivav@nitt.edu	**Telephone No.**	
Course Type	Elective		

Syllabus (approved in BoS)	
Given in cource teaching and learning activities	
COURSE OBJECTIVES	
To impart the knowledge in Non Destructive Testing with case studies.	
COURSE OUTCOMES (CO)	
Course Outcomes	**Aligned Programme Outcomes (PO)**
At the end of this course, the students would be able to:	
1. Understand the basics of Non-destructive testing	**1,2,4**
2. Describe the overview of Non-destructive testing methods understand the recent developments, modifications, and applications in Non-destructive testing and apply them in real time problems associated with failure analysis and regular quality testing for industries	**5,7,8,9,10,11,12**

COURSE PLAN – PART II

COURSE OVERVIEW

NDT plays an important role in quality control, flaw detection and other inspections areas in industries. This course will cover all fundamental techniques/process used in industries to evaluate the quality of products and statistical issues.

COURSE TEACHING AND LEARNING ACTIVITIES

S.No	Weeks	Topic	Mode of Delivery
1	Jan 3rd & 4th	Introduction of NDT, Types of NDT, Visual Inspection- tools, applications and limitations. Liquid Penetrant Inspection -principles, types and properties of penetrants and developers. Advantages and limitations of various methods of LPI. Magnetic particle inspection- principles, applications, advantages and limitations	PPT
2	Feb 1st & 2nd	Ultra-sonic testing(UT) - Nature of sound waves, wave propagation - modes of sound wave generation - Various methods of ultrasonic wave generation, types of UT Principles, applications, advantages, limitations, A, B and C scan - Time of Flight Diffraction (TOFD)	PPT
3	Feb 3rd & 4th	Radiography testing (RT) – Principles, applications, advantages and limitations of RT. Types and characteristics of X ray and gamma radiation sources, Principles and applications of Fluoroscopy/Real-time radioscopy - advantages and limitations – recent advances.	

4	March 1st & 2nd	Eddy current testing - Principles, types, applications, advantages and limitations of eddy current testing.	PPT
5	March 3rd & 4th	Thermography - Principles, types, applications, advantages and limitations. .	PPT
6	April 1st & 2nd	Optical & Acoustical holography- Principles, types, applications, advantages and limitations. Case studies: weld, cast and formed components	PPT

COURSE ASSESSMENT METHODS

S.No.	Mode of Assessment	Week	Duration	% Weightage
1	Continous Assement Test (Descriptive)	March 3rd week	1 Hr	25%
2	Seminar	March 4th week	15 min	10%
3	Case study analysis and data mappings	April 1st week	1 Hr	15%
4	End Semester Exam	As per institute norms	2 Hr	50%

CPA

1. Students, those who missed **assement I** are eligible to give **compensation test/retest** ~~at end of academic year~~ before end semester exam and its weightage will be 25% only.
2. Assessements 2 & 3 are compulsory and no compensation for them.
3. Supplementary exam will be conducted if students missed end semester exam.

COURSE EXIT SURVEY

Anonymous feedback will be collected from students through class representative at end of the semester.

COURSE POLICY

MODE OF CORRESPONDENCE (email/ phone etc)

Students can meet the faculty at any stage in the course duration in case he/she find difficulty in understanding the concept.

Mobile: 9786778444
In cabin: MME annexure building 202
Email: sivav@nitt.edu
ATTENDANCE : 75% mandatory

COMPENSATION ASSESSMENT

1. Compensation test will be conducted at end for **Sl.No 1** in assessment methodology
2. No compensation for assessment **Sl.No 2 & 3** in assessment methodology
3. Supplementary exam will be conducted for who missing term end exam

ACADEMIC HONESTY & PLAGIARISM

Students are expected to behave in ethical and honest manner at all stages throughtout the semester and their all relevant work related to academic should be without any plagiarism.

ADDITIONAL INFORMATION

Nil

FOR APPROVAL

Course Faculty	CC-Chairperson	HOD
Sivachittrambalam V	12/01/18	
V. Sivachittrambalam 12/01/18	(K. SIVA PRASAD)	