



Techno India N.J.R. Institute of Technology

Academic Administration of Techno N.J.R. Institute

Syllabus Deployment

Name of Faculty	: Mr. Naresh Kumar	Subject Code: 7ME4-21
Subject	: FEA LAB	
Department	: Mechanical Engineering	Sem: VII
Total No. of Lectures Planned:	8	Max. Marks: 75(IA: 45, ETE: 30)

COURSE OUTCOMES:

At the end of this course students will be able to:

- CO1: Demonstrate the ability to create models for trusses, frames, plate structures, machine parts, and components using ANSYS general-purpose software;
- CO2: Model multi-dimensional heat transfer problems using ANSYS;
- CO3: Demonstrate the ability to evaluate and interpret FEA analysis results for design and evaluation purposes;
- CO4: Develop a basic understanding of the limitations of the FE method and understand the possible error sources in its use.

LAB No.	LIST OF EXPERIMENTS
1	Laboratory work for the solution of solid mechanics problems, heat transfer problems, and free vibration problems
2	Introduction of GUI of the ANSYS software in the above mentioned areas' realistic problems.
3	Analysis of beams and frames (bending and torsion problems)
4	Plane stress and plane strain analysis problems
5	Problems leading to analysis of axisymmetric solids
6	Problems leading to analysis of three dimensional solids (a) Heat transfer problems (b) Modal analysis problem
7	Plane stress and plane strain analysis problems by MATLAB

TEXT/REFERENCE BOOKS

1. SESHU P., "TEXT BOOK OF FINITE ELEMENT ANALYSIS", PRENTICE HALL INDIA
2. INTRODUCTION TO FINITE ELEMENTS IN ENGINEERING, CHANDUPATLA AND BELEGUNDU, PRENTICE HALL INDIA
3. AN INTRODUCTION TO THE FINITE ELEMENT METHOD, REDDY J.N., TATA MCGRAW-HILL, NEW DELHI