MARRI LAXMAN REDDY
INSTITUTE OF TECHNOLOGY AND MANAGEMENT
(AN AUTONOMOUS INSTITUTION)
(Approved by AICTE, New Delhi & Affiliated to JNTUH, Hyderabad)
Accredited by NBA and NAAC with 'A' Grade & Recognized Under Section2(f) & 12(B)of the UGC act,1956

DEPARTMENT OF MECHANICAL ENGINEERING

2070383 CAD/CAM LAB

B.Tech.IV Year-I Sem **L/T/P/C**
0/0/2/1

VISION

The Mechanical Engineering Department strives for immense success in the field of education, research and development by nurturing the budding minds of young engineers inventing sets of new designs and new products which may be envisaged as the modalities to bring about a green future for humanity"

MISSION

Equipping the students with manifold technical knowledge to make them efficient and independent thinkers and designers in national and international arena. Encouraging students and faculties to be creative and to develop analytical abilities and efficiency in applying theories into practice, to develop and to disseminate new knowledge. Pursuing collaborative work in research and development organizations, industrial enterprises, research and academic institutions of national and international standards, to introduce new knowledge and methods in engineering teaching and research in order to orient young minds towards industrial development.

LIST OF EXPERIMENTS

1. Sketching: Development of part drawings for various components in the form of orthographic. Representation of dimensioning and tolerances.
2. Part Modelling: Generation of various 3D Models through Protrusion, revolve, sweep. Design of simple components.
3. Determination of deflection and stresses in 2D and 3D trusses and beams.
4. Determination of deflections, principal and Von-mises stresses in plane stress.
5. Determination of stresses in 3D and shell structures (at least one example in each case)
6. Estimation of natural frequencies and mode shapes, Harmonic response of 2D beam.
7. Study state heat transfer analysis of plane and axi-symmetric components.
8. Development of process sheets for various components based on Tooling and Machines.
9. Development of manufacturing defects and tool management systems.
10. Study of various post processors used in NC Machines.
11. Development of NC code for free form and sculptured surfaces using CAM software.
12. Machining of simple components on NC lathe and Mill by transferring NC Code / from CAM software.

COURSE OUTCOMES

CO	Course outcome
ME 383.1	Able to solve simple problems using FEA software.
ME 383.2	Generate freeform shapes in part mode to visualize components.
ME 383.3	Create complex engineering assemblies using appropriate assembly constraints.
ME 383.4	Develop G and M codes for turning components.
ME 383.5	Develop G and M codes for milling components.
ME 383.6	Generate automated tool paths for given engineering component.

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PROGRAM EDUCATIONAL OBJECTIVES

PEO1	Graduates shall emerge as successful Mechanical engineer's as their career progress
PEO2	**G**raduates apply fundamentals of engineering, in practical applications and engage in active research.
PEO3	**Mechanical Graduates** shall have the ability to design products with interdisciplinary skills.
PEO4	**G**raduates will serve the society with their professional skills

PROGRAM SPECIFIC OUTCOMES

PSO1- Students acquire necessary technical skills in mechanical engineering that make them employable graduate.
PSO2- An ability to impart technological inputs towards development of society by becoming an entrepreneur

LIST OF SOFTWARES

1. Analysis Software: Ansys.
2. NC Milling Machine.
3. NC Lathe Machine.
4. Desktop Systems with latest configuration and adequate graphic card.
5. AutoCad Software
6. CAM Software.
7. CATIA Software.

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Do's

- Enter laboratory with appropriate laboratory uniform and shoes.
- Keep all your belongings in the book rack or at the place suggested by lab instructor.
- Bring the laboratory manual, observation and record without fail.
- Students must attend the lab with ID cards and in the prescribed uniform.
- Read and understand how to carry the activity thoroughly before coming in to the laboratory.
- Report any broken plugs to your lecturer or laboratory technician immediately.
- Switch off the computers after use and arrange the chairs properly before leaving the lab.

Don'ts

- Do not eat or drink in the laboratory.
- Don't let water drip onto power strips.
- Do not operate the computers without the permission of the staff.
- Do not use the pen drives in the laboratory without permission.
- Don't use mobile phones during laboratory hours.
- Don't fool around in the laboratory.
- Don't come with long hair, dangling jewelry and loose or baggy clothing which are a hazard in the laboratory.