| Course code | Course Name | L-T-P-Credits | Year of Introduction |
|---|---|---|---|
| ME332 | COMPUTER AIDED DESIGN AND ANALYSIS LAB | 0-0-3-1 | 2016 |

**Prerequisite: ME308 Computer aided design and analysis**

**Course Objectives:**

- To provide working knowledge on Computer Aided Design methods and procedures
- To impart training on solid modelling software
- To impart training on finite element analysis software

**Syllabus**

Introduction to solid modeling and Finite Element Analysis software.

Exercises on modeling and assembly.

a. Creation of higher end 3D solid models.(minimum 3 models)

b. Creation of assembled views of riveted joints, cotter joints and shaft couplings. (minimum 3 models)

Exercises on the application of Finite Element Method/Finite Volume Method to engineering systems:-

a. Structural analysis. (minimum 3 problems)

b. Thermal analysis. (minimum 2 problems)

c. Fluid flow analysis. (minimum 1 problem)

**Expected outcome:**

The students will be able to

i. Gain working knowledge in Computer Aided Design methods and procedures

ii. Solve simple structural, heat and fluid flow problems using standard software

**Points to note:**

- Any appropriate solid modeling software (like CATIA, Solids Works, ProE, IDEAS, Siemens Solid Edge and NX, free software, etc.) and package (like ANSYS, Comsol Multi Physics, NASTRAN, ABAQUS, ADINA, Siemens Femap Nastran,free software etc.) may be used.
- **Evaluation**

  Class exercises 60 marks
  Regular class viva 10 marks
  Final internal exam using software 30 marks
  All the above three evaluations are mandatory.

**References Books**:


1. Daryl Logan, A First course in Finite Element Method, Thomson Learning, 2007
2. David V Hutton, Fundamentals of Finite Element Analysis, Tata McGraw Hill,2003
3. Ibrahim Zeid, CAD/ CAM Theory and Practice, McGraw Hill, 2007
4. Mikell P. Groover and Emory W. Zimmer, CAD/ CAM – Computer aided design and manufacturing, Pearson Education,1987
5. T. R. Chandrupatla and A. D. Belagundu, Introduction to Finite Elements in Engineering, Pearson Education, 2012