



“Mechanized Design Application”

Department: Mechanical Engineering

Course Name : Elective – III Tribology

Final Year of Mechanical Engineering (2015 Course)

Course Code : 402049A

Course Objectives:

1. To provide the knowledge and importance of Tribology in Design, friction, wear and lubrication aspects of machine components.
2. To select proper grade lubricant for specific application.
3. To understand the principles of lubrication, lubrication regimes, theories of hydrodynamic and the advanced lubrication techniques.
4. To introduce the concept of surface engineering and its importance in tribology.
5. To understand the behavior of Tribological components.

Course Outcomes:

On completion of the course, students will be able to –

CO1: Understand the different techniques used to solve mechanical engineering problems.

CO2: Derive and use 1-D and 2-D element stiffness matrices and load vectors from various methods to solve for displacements and stresses.

CO3: Apply mechanics of materials and machine design topics to provide preliminary results used for testing the reasonableness of finite element results.

CO4: Explain the inner workings of a finite element code for linear stress, displacement, temperature and modal analysis.

CO5: Use commercial finite element analysis software to solve complex problems in solid mechanics and heat transfer.

CO6: Interpret the results of finite element analyses and make an assessment of the results in terms of modeling (physics assumptions) errors, discretization (mesh density and refinement toward convergence) errors, and numerical (round-off) errors.