

"Techno – Social Excellence" MarathwadaMitraMandal's INSTITUTE OF TECHNOLOGY (MMIT)

Lohgaon, Pune-411047.

"Mechanized Design Application" **Department of Mechanical Engineering**

Course Name: Design of Machine Elements – I Class:TE Mechanical Engineering Course Code: 302041 (2015Pattern)

Course Objectives:

- 1. Student shall gain appreciation and understanding of the design function in Mechanical Engineering, different steps involved in designing and the relation of design activity with manufacturing activity.
- 2. The student shall learn to choose proper materials for different machine elements depending on their physical and mechanical properties. They will learn to apply the knowledge of material science in real life situations.
- 3. Student shall gain a thorough understanding of the different types of failure modes and criteria. They will be conversant with various failure theories and be able to judge which criterion is to be applied for a particular situation.
- 4. Student shall gain design knowledge of the different types of elements used in the machine design process, for e.g. fasteners, shafts, couplings etc. and will be able to design these elements for each application.

Course Outcomes:

- CO1 -Ability to identify and understand failure modes for mechanical elements and design of machine elements based on strength.
- CO2 -Ability to design Shafts, Keys and Coupling for industrial applications.
- CO3 -Ability to design machine elements subjected to fluctuating loads.
- CO4 -Ability to design Power Screws for various applications.
- CO5 -Ability to design fasteners and welded joints subjected to different loading conditions.
- CO6 -Ability to design various springs for strength and stiffness.