

TRIBOLOGY (3 - 0 - 0)

Introduction - Tribology in design, Tribology in industry. Lubricants- Properties- physical and chemical, Types of additives, extreme pressure lubricants. Lubrication-introduction, basic modes of lubrication

Friction - friction measurement, theory of friction. Wear: Types of wear, various factors affecting wear, measurement of wear, wear between solids and liquids, theory of wear.

Gas Lubrication. Lubrication in metal working: Rolling, Forging, Drawing and extrusion.

Solid tribological coatings and materials, - surface treatments - surface modification processes. Tribological properties of metallic and ceramic coatings.

Surface topography measurements - Electron microscope and friction and wear measurements - Use of transducers and instruments in Tribology- film thickness measurement using modern techniques - Development of test rigs for Tribology research.

References:-

1. Kenneth C Ludema, Friction, wear, lubrication: A text book in Tribology, CRC press 1996
2. S.K. Basu, S.N. Sengupta & B.B. Ahuja, Fundamentals of Tribology, Prentice-Hall of India Pvt Ltd New Delhi, 2005
3. J.A. Williams, Engineering Tribology, Oxford Univ. Press 1994

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