

MACHINE DESIGN -II**UNIT 1**

Spur Gears: Conjugate action, involute gears, gear cutting methods, tooth loads, strength of spur gears in bending and in wear. Dynamic loading, Gear materials, design of gears and involute splines. Gear profile corrections, AGMA and Indian standards. **6**

Helical Gears: Tooth relationship, tooth proportions. Design of helical gears, crossed helical gears, AGMA and Indian standards. **6**

Worm And Bevel Gears: Analysis of loads and stresses, power rating, efficiency. Gear standard and proportions. **4**

UNIT II

Bearing and Lubrication: Types of ball bearings, roller bearing, needle roller bearing, life of bearing, reliability considerations, Selection of ball, roller, tapered roller and thrust bearings, Lubrication and sealing. Mounting of bearings. **6**

Sliding Bearings: Hydrodynamic theory of lubrication, types of bearings, design of bearings using design charts, boundary lubrication, hydrostatic bearings, hydrodynamic thrust bearing. Lubrication and lubricants. **8**

UNIT III

Engine Parts: Design of engine parts such as connecting rod, crankshaft and cylinder & piston. **10**

Note that there are 3 big units instead of usual 5 units

References:

1. Mechanical Engineering Design- Joseph E. Shigley Mc Graw Hill Publications.
2. Design of Machine Members- Alex Valance and V1 doughtie, Mc-Graw- Hill Co.
3. Machine Design- D.N.Reshetov, Mir publishers: Moscow.
4. Machine Design- M.F. Spott. Prentice Hall: India
5. Fundamental Of Machine Design(vol:1, 1-5) Porlov, Mir pub. Moscow
6. Machine Elements: Dobrovsky, Mir. Pub.moscow data books
7. Fundamentals of machine design- Richard M.Phelan, Tata Mc-graw Hill pub.
8. Machine Design- Maleev and Hartman, CBS
9. Machine Design- Sharma and Agrawal, Kataria
10. Design of Machine Elements-Bhandari,TMH

11. Machine Design- Black and Adams, Mc Graw Hill