ME 322 Machine Design (2-0-2-6)

Prerequisite: ME 314 or equivalent

Design of Gears; Lubrication and Wear consideration in Design; Design and selection of Bearings: Hydrodynamic lubrication theory, Hydrostatic and Hydrodynamic bearings (e.g., journal), Rolling Element Bearings; Systems Approach to Design: Decision Making, Simulation of mechanical systems using CAD tools, Sensitivity analysis of design parameters, Value Analysis and Value Addition to designed components and systems; Exercises of mechanical systems design with examples; Overview of Optimization in Design; Reliability and Robust Design; Communicating the Design.

Texts:
[1] Design Data Book of Engineers, Compiled by Faculty of Mechanical Engineering, PSG College of Technology, Publisher Kalaikathir Achchagam, Coimbataore, 2009
[2] J. E. Shigley, Mechanical Engineering Design, McGraw Hill, 1989

References:
[1] G. M. Maitra Handbook of gear Design Second Edition, Tata McGraw Hill, New Delhi, 1994.
[2] D.W. Dudley, Handbook of Practical Gear Design, CRC Press, 2009
[3] M.F. Spotts, T.E. Shoup, L. E. Hornberger, S. R Jayram and C. V. Venkatesh, Design of Machine Elements, 8th Ed., Person Education, 2006.
[4] V. B. Bhandari, Design of Machine Elements, 2nd Ed., Tata Mcgraw Hill, 2007.
[5] R. C. Juvinall and K. M Marshek, Fundamentals of Machine Component Design, 3rd Ed., Wiley, 2007.
[6] V. Ramamurti, Computer Aided Mechanical Design and Analysis, 3rd Ed., Tata McGraw Hill, 1996.
[7] A. H. Burr and J. B. Cheatham, Mechanical Analysis and Design, 2nd Ed., Prentice Hall, 1997.
[8] J. R. Dixon, Design Engineering: Inventiveness, Analysis and Decision Making, TMH, New Delhi, 1980.