

ME 632 Condition Monitoring of Machines (3-0-0-6)

Introduction to machinery maintenance, basic vibration theory, fundamentals of data acquisition, principles of condition monitoring, transducers for condition monitoring, fault diagnosis in rotating machines, NDT methods in condition monitoring, wear and debris analysis, case studies in condition monitoring.

Textsbooks:

- [1] R. A. Collacott, *Vibration Monitoring and Diagnosis*, Willey, New York, 1979
- [2] H. P. Bloch and F. P. Geitner, *Practical Machinery Management for Process Plants*, Vol. 1, 2 3 & 4., Gulf Publishing Company, 1983
- [3] H. M. Harris and C. E. Crede, *Shock and Vibration Handbook*, McGraw-Hill Book Company, 1994
- [4] A. V. Oppenheim and R.W. Shafer, *Digital Signal Processing*, Prentice-Hall, Inc., 1975
- [5] V. Wowk, *Machinery Vibration Measurement and Analysis*, McGraw-Hill, Inc., 1991
- [6] R. B. Randall, *Frequency Analysis*, Bruel & Kjaer Publication, 1986
- [7] J. S. Bendat and A. G. Piersol, *Engineering applications of correlation and Spectral Analysis*, John Wiley & Sons, 1980