

GUJARAT TECHNOLOGICAL UNIVERSITY
M.E. SEMESTER-II
MECHATRONICS ENGINEERING

Subject Name: **Diagnostic Maintenance and Monitoring (Elective II)**

Subject Code: **1724704**

Sr. No	Course Content	Total Hrs.
1.	Introduction Introduction to Condition Based Maintenance (CBM), Application and economic benefits, Signature analysis - online and off-line techniques	05
2.	Various Condition Monitoring (CM) techniques Vibration monitoring and analysis, Time and Frequency domain analysis, Shock Pulse Method, Thermal monitoring, Noise monitoring, Envelope detection technique, Oil analysis including wear debris and contaminant monitoring, Performance monitoring, Acoustic emission and other techniques, Non-destructive techniques	20
3.	Knowledge-based systems for Condition Monitoring Future developments in condition monitoring techniques and systems	05
4.	Practical applications of diagnostic maintenance Condition monitoring of mechanical and electrical machines, Condition monitoring of Bearings and gears, Electro pneumatic systems	10

Books:

- 1. Handbook of Condition Monitoring: Techniques and Methodology**
By A. Davies, Springer
- 2. Handbook of Condition Monitoring**
By B. K. N. Rao, Elsevier
- 3. Condition-based Maintenance and Machine Diagnostics**
By J.H. Williams, A. Davies, P.R. Drake, Springer