

GUJARAT TECHNOLOGICAL UNIVERSITY

B. E. SEMESTER: VII

PRODUCTION ENGINEERING

Subject Name: **Quality Management and Reliability Engineering**

Subject Code: **172504**

Teaching Scheme				Evaluation Scheme			
Theory	Tutorial	Practical	Total	University Exam (E)		Mid Sem Exam (Theory) (M)	Practical (Internal)
				Theory	Practical		
3	1	0	4	70	30	30	20

Sr. No	Course Content	Total Hrs.
1.	Introduction Quality Management Indian Companies Monopolize the Deming Awards in 2003, Quality Management- A conceptual frame work, Strategic Quality Management, Benchmarking.	04
2.	Quality Standards and business excellence models Quality system Standards, Bureau of Indian Standards, Agmark Grading and standardization, Quality council of India, International Organization for Standardization, Conformance to Specifications, Quality Assurance, Quality Circles, Quality audits, ISO 14000, Customer Operations Performance Centre (COPC) 2000	04
3.	Total Quality Management (TQM) W. Edwards Deming's Contribution to TQM, Juran's Contribution to TQM, Crosby's contribution to TQM, Ishikawa's contribution to TQM, Comparing the Quality Gurus, Kaizen, Total Productive Maintenance(TPM).	08
4.	Service quality management and Cost of Quality Products and services, Classification of services, Service Quality, Measuring Service Quality, Prevention costs, Appraisal Costs, Internal and External failure costs, Cost of quality models	06
5.	Six sigma and Experimental design Meaning of Six sigma, The seven magnificent Quality tools, Poka-Yoke, Introduction of experimental design, Taguchi Method in Experimental Design, Concept, Application of QFD, Case Study.	10

6.	Quality strategy for Indian industries India's Quality Journey so far, Quality management in India, Quality related priorities of Indian companies, Case studies	04
7.	Reliability Engineering Introduction, Need, Basic Elements of Reliability, Measurement of Reliability, Cost of Reliability, Maintenance & Reliability, Maintainability, MTBF, MTTR, Maintenance action Rate, Failure Mode Effect & Criticality Analysis (FMECA), Hazard Analysis, System Reliability- Series, Parallel and Mix Problem.	08
8.	Intellectual Properties System Definition of intellectual property, importance of IPR; TRIPS and its mplications, patent, copyright, industrial design and trademark.	04

Text Books:

1. Quality Management by Kanishka Bedi
2. Intellectual Property Rights, Prbuddha Ganguli, TMH
3. Probability and Reliability with Statistics, Trivedi, PHI

Reference Books:

1. Statistical Quality Control By M. Mahajan
2. TQM in Service Sector, R.P.Mohanty and R.R.Lakhe, Jaico Publishing House,Mumbai
3. Total Quality Management, Arora ,Kataria
4. Total Quality Management, Subburaj, TMH
5. Practical Reliability Engineering, Connol, Wiley