TOTAL QUALITY MANAGEMENT

(Elective - I)

Course Code: 15ME2109

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Course Outcomes:

At the end of the course, the student will be able to

CO1: Explain quality standards and need for standardization

CO2: Implement quality measurement systems in various applications

CO3: Prepare and use control charts for SQC

CO4: Implement six sigma approach for various industrial applications

CO5: Explain standards for total quality management

UNIT –I (10-Lectures)

Introduction to quality – definitions - TQM – overview – history – stages of evolution - elements – definitions – continuous improvement– objectives – internal and external customers - customer satisfaction and customer delight

UNIT-II (10-Lectures)

Quality standards – need of standardization - Institutions – bodies of standardization, ISO 9000 series – ISO 14000 series – other contemporary standards, quality models such as KANO, Westinghouse Quality measurement systems (QMS) – developing and implementing QMS – non conformance database, inspection, nonconformity reports, QC, QA, quality costs, tools of quality

UNIT-III (10-Lectures)

Problem solving - problem solving process – corrective action – order of precedence – system failure analysis approach – flow chart – fault tree analysis – failure mode assessment and assignment matrix – organizing failure mode analysis – pedigree analysis, cause and effect analysis, FMEA case studies.

UNIT-IV (10-Lectures)

Quality circles – organization – focus team approach – statistical process control – process chart – Ishikawa diagram – preparing and using control charts, SQC, Continuous improvement – 5 S approach, Kaizen, reengineering concepts. Quality function development (QFD, bench marking – Taguchi analysis - Taguchi design of experiments, reliability models, reliability studies

UNIT-V (10-Lectures)

Value improvement elements – value improvement assault – supplier teaming, vendor appraisal and analysis, lean engineering

Six sigma approach – application of six sigma approach to various industrial situations, case studies

TEXT BOOK:

1. Bester Field, "Total Quality Management", 3e, Pearson Education, Asia, New Delhi, 2002

REFERENCES:

1. Logothetis W, "*Management Total Quality*", Prentice Hall of India, New Delhi, 1999.
2. Feigenbaum A.V., "*Total Quality Management*", McGraw-Hill, 1991.
3. Narayana V. and Sreenivasan N.S., "*Quality Management – Concepts and Tasks*", New Age International, 1996.