TOTAL QUALITY MANAGEMENT
(Elective-I)

Subject Code: 13ME2110

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Pre requisites: Production planning control and Industrial management

Course Educational Objectives:

To make the student understand

1. quality standards and need for standardization
2. development and implementation of quality measurement systems
3. quality circles and quality function development
4. application of six sigma approach to various industrial situations
5. concept of total quality management

Course Outcomes:

The student will be able to

1. explain quality standards and need for standardization
2. implement quality measurement systems in various applications
3. prepare and use control charts for SQC
4. implement six sigma approach for various industrial applications
5. suggest standards for total quality management in an organization

UNIT –I

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

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

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

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

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