

Gautam Buddha University, Greater Noida

School of Engineering (Mechanical Engineering)

Degree	Course Name	Course Code	Marks:100
M. Tech.	Total Quality Management	MEI 511	SM+MT+ET 25+25+50
Semester	Credits	L-T-P	Exam.
I	3	3-0-0	3 Hours

Unit – I

Introduction: Definition of Quality; Dimensions of quality; Quality planning; Quality costs; Analysis techniques for quality costs; Basic concepts of total quality management; Historical review; Principles of TQM; Leadership – Concepts; Role of senior management; Quality council; Quality statements; Strategic planning; Deming philosophy; Barriers to TQM implementation.

(06 Hours)

Unit – II

TQM Principles: Customer satisfaction – Customer perception of quality; customer complaints; Service quality; Customer retention; Employee involvement – motivation.

(04 Hours)

Unit – III

TQM Strategies: Empowerment; Teams; Recognition and reward; Performance appraisal; Benefits; Continuous process improvement – Juran Trilogy; PDCA Cycle; 5S; Kaizen; Supplier partnership – Partnering; Sourcing; Supplier selection; Supplier rating; Relationship development; Performance measures; Basic concepts; Strategy; Performance measures.

(06 Hours)

Unit - IV

Statistical Process Control (SPC): The seven tools of quality; Statistical fundamentals; Measures of central tendency and dispersion; Population and sample; Normal curve; Control charts for variables and attributes; Process capability; Concept of six sigma; New seven quality tools. **(12 Hours)**

Unit - V

TQM Tools: Benchmarking – Reasons to benchmark; Benchmarking process; Quality function deployment (QFD) – House of quality; QFD process; Benefits; Taguchi quality loss function; Total productive maintenance (TPM), Concept; Improvement; Needs; FMEA - Stages of FMEA. **(12 Hours)**

Unit - VI

Quality Systems: Need for ISO 9000 and other quality systems; ISO 9000:2000 quality system; Elements; Implementation of quality system; Documentation; Quality auditing; TS 16949; ISO 14000 – Concept; Requirements and benefits. **(05 Hours)**

Recommended Books:

1. Total Quality Management; Pearson Education; Dale H. Besterfield; et al.; Inc. 2003. (India reprint 2004).
2. The Management and Control of Quality (5th Edition); James R. Evans & William M. Lidsay; South-Western (Thomson Learning); 2002.
3. Total Quality Management; A. V. Feigenbaum; McGraw-Hill; 1990.
4. Total quality Management Butterworth; J. S. Oakland; Hcinemann Ltd.; Oxford. 1989.
5. Quality Management – Concepts and Tasks; V. Narayana and N. S. Sreenivasan; New Age International 1996.
6. Total Quality Management for Engineers; Zeiri; Wood Head Publishers; 1991.
7. Quality Management: Creating & Sustaining Organizational Effectiveness; 2nd Ed.; Summers; Prentice Hall of India Learning.