

Quality Management

MEM 125

Semester: Second
Credit Hr: 3

General objectives:

- State and explain the concept of Quality Management that includes quality evolution, Quality Assurance, concept of TQM, TQM tools and techniques including statistical process control, QM implementation and continuous improvement in products or services of any organization.
- Develop the students to lead in the competitive market by using successful marketing & managerial strategy as a quality management, their approach and quality certification.

Specific objectives:

Specific objectives of this unit are:

- to provide knowledge to the students about quality and their interrelationships with cost.
- to acquaint students with the approach of quality control and quality assurance system including their key elements and factors.
- to familiarize the students with Total Quality Management system(TQM) , their elements and approach.
- to interpret methods of developing Statistical Process Control (SPC) and appropriate use of tools.
- to familiarize the students with ISO 9000 quality management system , certification process and approach.

Course contents

Unit 1: Concept of Quality **4 hrs**

Concept of quality, Overview of quality, history of quality, Dimensions of quality, competitive advantage, Internal & external perspective of quality, Importance of quality

Unit 2: Quality Control & Quality Assurance **10 hrs**

Concept and evaluation of quality control, concept of process variation, sampling technique, Measurement & metrology, precision vs accuracy, Inspection and Gauges, Inspection methods. Types of gauges, Limit fit & tolerance, Non destructive test, Concept of quality assurance, approach of quality assurance.

Unit 3: Statistical Process Control **4 hrs**

Process Control Chart, Capability Index, Range Charts, Implementation of Statistical Process Control, and Control Charts

Unit 4: Quality Management Assistance Tools: 4 hrs

Problem solving techniques: Ishikawa Fish bone diagram – Quality Circles – Flow Charts – Pareto Analysis, Brainstorming, Statistical Tool

Unit 5: Total Quality Management 10 hrs

TQM definition, Main elements of TQM, Pioneers of TQM , Principles of Quality Management , TQM systems , Approach of TQM and implementation , Continuous improvement.

Unit 6: Quality Management Approaches 6 hrs

Management Philosophy: Deming Principle and 14 points of Management, Juran philosophy, Crosby philosophy, Taguchi principle, Six sigma principle, Quality Function Deployment

Unit 7: Quality Management Standards 7 hrs

Concept of ISO standard for quality management system, History of ISO 9000 , Quality Management system, Process of QMS implementation for ISO Standards, Certification process, Quality Manual, Auditing techniques, internal Audits, Planning for audits, check list for audits.

References:

1. Besterfield, et al. Total Quality Management. PHI
2. Ehresman, Terry (1996). Small Business Success through TQM. Tata McGraw-Hill Publishing Company Limited, Delhi, India.
3. Hansen and Ghare (latest ed.). Quality control and application. PHI
4. Jankiraman & Gopal (new). Total Quality Management. PHI.
5. Montgomery, Douglas C. (1996). Introduction to Statistical Quality Control. John Wiley and Sons, Inc.
6. Mitra, Amitava (2005). Fundamentals of quality control and improvement (2nd ed.). PHI.
7. Raju, S. M. Sundara (1997). Total Quality Management. Tata McGraw-Hill Publishing Company Limited, Delhi, India
8. Ron Collard (latest). Total Quality Success through people. Jaico publishing house.
9. Summers (new). Quality Management: Creating and sustaining organizational effectiveness, PHI.
10. Smith (latest ed.). Quality problem solving. PHI
11. Suganthi & Samuel. Total Quality Management. PHI
12. Zairi, Mohamed (1992 /or latest one). Total Quality Management for Engineers. Aditya Books Private Limited, Delhi, India.