COURSE CONTENT

TOTAL QUALITY MANAGEMENT								
II SEMESTER								
Course Code	**Category**	**Hours/Week**			**Credits**	**Maximum Marks**		
		L	**T**	**P**	**C**	**CIE**	**SEE**	**Total**
24MB0014C	**Open Elective**	4	-	-	4	40	60	100
Contact Classes:60	**Tutorial Classes:** Nil	**Practical Classes:** Nil				**Total Classes:** 60		
Prerequisite: Basic knowledge of management principles, elementary statistics, and fundamental concepts of production/operations management.								

COURSE OVERVIEW:

This course provides an understanding of the principles and practices of Total Quality Management (TQM), including quality philosophies, leadership, customer satisfaction, continuous improvement techniques, supplier partnerships, quality management systems such as ISO standards, and modern quality tools like Six Sigma, FMEA, SPC, and benchmarking. It also covers management tools, quality strategies, and the application of quality management practices in industrial and service organizations.

COURSE OBJECTIVES:

- To understand the fundamental principles, philosophies, and concepts of Total Quality Management (TQM) and the contributions of quality gurus.
- To learn continuous improvement techniques and quality practices such as PDCA cycle, Kaizen, benchmarking, and supplier partnership for organizational excellence.
- To familiarize students with quality management systems including ISO 9000, ISO 14000 standards, and auditing procedures.
- To develop knowledge of quality tools and techniques such as SPC, Six Sigma, FMEA, QFD, and experimental design for process improvement.
- To apply quality management principles and management tools for improving productivity and quality in manufacturing and service industries.

COURSE OUTCOMES: After Completion of the course, students should be able to

1. Explain principles, philosophies, leadership traits, customer-focused strategies shaping total quality management.
2. Apply continuous improvement approaches encompassing PDCA cycle, Kaizen, Juran trilogy, benchmarking practices.
3. Interpret quality management systems emphasizing ISO standards, environmental

management systems, quality function deployment, six sigma.

4. Analyse design-oriented quality tools comprising FMEA, total productive maintenance, communication models, product reliability methods.
5. Evaluate management tools utilizing process control charts, experimental designs, quality strategies within industrial contexts.

UNIT-I PRINCIPLES AND PRACTICES - I

Introduction - Quality Gurus - Benefits of TQM – Quality Dimensions-Products and Services, Leadership and TQM, characteristics of Quality leaders. The Deming Philosophy - Quality councils - Strategic Planning - Customer Satisfaction-Customer perception of Quality - service Quality - Customer Retention

UNIT-II PRINCIPLES AND PRACTICES - II

Continuous process Improvement - the Juran trilogy, - The PDCA Cycle – Kaizen - Reengineering. Supplier Partnership – Partnering – Sourcing -Supplier Selection - Supplier rating- Performance Measures - Basic concept – Strategy - Quality cost - Bench marking - reasons for bench marking – Process - Understanding current performance - Pitfalls and criticism of benchmarking.

UNIT-III TOOLS AND TECHNIQUES - I

Information Technology-Computers and the quality functions-Information quality Issues-Quality management System-Benefits of ISO registration-ISO 9000 series Standards-Internal Audits. Environmental Management System-ISO 14000 series-Benefits of EMS- Relation to Healthy and safety-Quality Function Deployment-The voice of the Customer- Building a House of Quality-QFD Process, Six Sigma.

UNIT-IV TOOLS AND TECHNIQUES - II

Quality by Design- Benefits-Communication Model-Failure Mode and Effective Analysis-Failure Rate, FMEA Documentation-The process of FMEA Documentation-Product Liability-Proof and Expert Witness. Total Productive Maintenance- promoting the Philosophy and Training-Improvements and needs- Autonomous Work groups

UNIT – V MANAGEMENT TOOLS

Management Tools – Introduction - Forced field Analysis - Tree diagram -Process decision Program Chart - Statistical Process Control - Cause and Effect diagram - Histogram-state of control – Process Capability- Experimental Design-Hypothesis -Orthogonal Design -Two factors and Full Factors-Quality Strategy for Indian Industries - Quality Management in India, Latest Amendments in Total Quality Management

TEXT BOOKS:

1. Joel E Ross : Total Quality Management, 3e, CRC press, 2015
2. Dale H. Bester feild, Carlon Bester feild: Total Quality Management, Pearson Education,

2015
3. Sridhar Bhat: Total Quality Management Texts and Cases, Himalaya, 2015.
4. Poornima M Charanti math Total Quality Management, Pearson Education, 2015
5. Dr. S. Kumar, Total Quality Management, University Science Press, 2015
6. Kanishka Bedi: Quality Management, Oxford,2015

REFERENCE BOOKS:

- Susanne Chishti and Janob Barberis, The Fintech Book, Wiley
- David L. Shrier and Alex Pentlan, Global Fintech, The MIT Press, 2022.

ELECTRONIC RESOURCES:

1. http://www.sixsigmatutorial.com
2. http://www.scirp.org
3. http://www.sciencedirect.com
4. http://www.springerlink.com/content/f780526553631475

MATERIALS ONLINE:

1. Course template
2. Tutorial question bank
3. Tech talk and Concept Video topics
4. Open-ended experiments
5. Definitions and terminology
6. Assignments
7. Model question paper – I
8. Model question paper – II
9. Lecture notes
10. PowerPoint presentation
11. Drishya Siksha Sangrah (DSS) Videos