**B.Tech III Year II Semester**

**JNTUA COLLEGE OF ENGINEERING (AUTONOMOUS) PULIVENDULA**

**19AME64f – TOTAL QUALITY MANAGEMENT**

*(Professional Elective – II)*

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**Course Objectives:** The objectives of the course are to make the students learn about

- Introduce the students, the basic concepts of Total Quality Management.
- Expose with various quality issues in Inspection.
- Gain Knowledge on quality control and its applications to real time.
- Know the extent of customer satisfaction by the application of various quality concepts.
- Understand the importance of Quality standards in Production.

**UNIT – I** **10 Hrs**

Introduction: Definition of Quality, Dimensions of Quality, Definition of Total quality management, Quality Planning, Quality costs – Analysis, Techniques for Quality costs, Basic concepts of Total Quality Management.

**Learning Outcomes:**

At the end of this unit, the student will be able to

- Define what is quality. **L2**
- Explain the principles of Quality Planning. **L2**
- Explain the techniques of quality costs. **L2**
- Interpret the concepts of Total Quality Management. **L2**
- Contrast the present quality issues with the past. **L2**

**UNIT – II: Historical Review** **8 Hrs**

Quality council, Quality statements, Strategic Planning, Deming Philosophy, Barriers of TQM Implementation, Benefits of TQM, Characteristics of successful quality leader, Contributions of Gurus of TQM, Case studies.

**Learning Outcomes:**

At the end of this unit, the student will be able to

- Explain the importance of Quality council. **L2**
- Identify the barriers of TQM Implementation. **L3**
- Discuss the benefits of TQM. **L6**
- Summarize the essential characteristics of successful quality leader. **L2**
- Outline the contributions of TQM Gurus. **L2**

**UNIT – III: TQM Principles** **10Hrs**

Customer Satisfaction – Customer Perception of Quality, Customer Complaints, Service Quality, Customer Retention, Employee Involvement – Motivation, Empowerment teams, Continuous Process Improvement – Juran Trilogy, PDSA Cycle, Kaizen, Supplier Partnership – Partnering, sourcing, Supplier Selection, Supplier Rating, Relationship Development, Performance Measures – Basic Concepts, Strategy, Performance Measure Case studies

**Learning Outcomes:**

At the end of this unit, the student will be able to

- Explain the importance of customer satisfaction, Service Quality and Customer Retention. **L2**
- Apply the principles of motivation and Empowerment. **L3**
- Compare the perfection and continuous improvement. **L2**
- Measure the Process improvement using Juran Trilogy. **L5**

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**UNIT – IV: TQM Tools** **10Hrs**

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, The seven tools of quality, Process capability, Concept of Six Sigma, New Seven management tools, Case studies.

**Learning Outcomes:**

At the end of this unit, the student will be able to

- Infer the benefits of benchmarking. **L2**
- List the benefits of QFD Process. **L1**
- Identify various zones in House of Quality. **L3**
- Apply Six sigma towards quality improvement. **L3**
- List the seven tools of quality. **L1**

**UNIT – V: Quality Systems** **8 Hrs**

Need for ISO 9000 and Other Quality Systems, ISO 9000: 2000 Quality System – Elements, Implementation of Quality System, Documentation, Quality Auditing, QS 9000, ISO 14000 – Concept, Requirements and Benefits, Case Studies.

**Learning Outcomes:**

At the end of this unit, the student will be able to

- Explain the importance of ISO Standards. (L2) **L2**
- Discuss the need of ISO9000 and Other Quality systems. (L6) **L6**
- Build awareness on the services of ISO9000. (L6) **L6**
- Infer the process of documentation. (L2) **L2**
- Compare ISO 9000 and ISO 14000. (L2) **L2**

**Text Books:**

1. Dale H Besterfield, Total Quality Management, Fourth Edition, Pearson Education, 2015
2. Subburaj Ramaswamy, Total Quality Management, Tata Mcgraw Hill Publishing Company Ltd., 2005
1. Joel E.Ross , Total Quality Management, Third Eition, CRC Press, 2017

**Reference Books:**

1. Narayana V and Sreenivasan N.S, Quality Management – Concepts and Tasks, NewAge International, 1996
2. Robert L.Flood, Beyond TQM, First Edition, John Wiley & Sons Ltd, 1993
3. Richard S. Leavenworth & Eugene Lodewick Grant, Statistical Quality Control, Seventh Edition, Tata Mcgraw Hill, 2015
4. Samuel Ho , TQM – An Integrated Approach, Kogan Page Ltd, USA, 1995

**Course Outcomes:**

At the end of this Course the student will be able to

- Develop an understanding on quality Management philosophies and frameworks **L3**
- Adopt TQM methodologies for continuous improvement of quality **L6**
- Measure the cost of poor quality, process effectiveness and efficiency to identify areas for improvement **L4**
- Apply benchmarking and business process reengineering to improve management processes. **L3**

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