Course Name: QUALITY MANAGEMENT

Course Code:

Course Objectives: Give students a general idea about how to improve quality of goods and services.

2. To ensure that students know tools of Quality Management.

3. To give students an understanding of SPC techniques.

4. To make students familiar with differences between Common and Special causes

of variations and their influence to technological processes outcomes.

5. To explain and show in practice the benefits of teamwork for getting better

results.

Module I: Introduction to Quality Management (QM)

- Evolution of Quality,
- Definition of Quality
- Dimensions of Quality
- Quality Control, Quality Assurance, Total Quality Management (TQM).
- Quality Gurus: Dr. Walter Shewhart-Contribution of Shewhart to quality management, Dr. Edwards Deming-Contribution of Deming to quality management,
- Philip B. Crosby-Contribution of Crosby to quality management,
- Dr. Joseph Juran- Contribution of Juran to quality management,
- Dr. Genichi Taguchi- Contribution of Taguchi to quality management,
- Dr. Shiegeo Shingo Contribution to Shiegeo Shingo to quality management,
- Dr. Kaoru Ishikawa-Contribution of Ishikawa to quality management,
- Masaaki Imai.

Module II: Quality as a Strategic Decision & Customer Focus

- Meaning of Strategy and Strategic Quality Management,
- Mission and Vision Statements, Quality Policy, Quality Objectives,
- Strategic Planning and Implementation,
  - McKinsey 7s Model,
- Competitive Analysis, Management Commitment to Quality
- Meaning of Customer and Customer Focus,
- Classification of customers, Customer Focus,
- Customer Perception of Quality, Factors affecting customer perception,
- Customer Requirements, Meeting Customer Needs and Expectations, Customer Satisfaction and Customer Delight, Handling Customer Complaints

Module III: Cost of Quality & Continuous Improvement Process

- Quality Control Tools:
  - Check Sheet,
  - Histogram, Shapes of histogram, Drawing a histogram,
  - Pareto Chart, Drawing a Pareto chart,
  - Cause & Effect Diagram, Scatter Diagram, Control chart
- Statistical Quality Control
  - Defining Statistical Quality Control,
  - Understanding the Process,
  - Variations and Causes of Variations,
  - Acceptable Sampling, Sampling methods, Probability based sampling, Non-probability-based sampling, Acceptance sampling plans,
  - Control Charts, Process Capability, Process Capability Index, Six Sigma

Module IV: Productivity & Supplier Relations, Quality Tools

- Productivity
  - Defining Productivity, Importance of Productivity,
  - Productivity Factors,
  - Workforce and Productivity, Work study for productivity, Managing Improvement
- Supplier Relations
  - Principles of Supplier Relations / Supplier Relationship Development,
  - Togetherness, Types of Suppliers,
  - Outsourcing strategy,
  - Partnering, Goals of partnership, Building successful partnership,
  - Supplier Selection and Rating, Establishing due process, Criteria for supplier selection, Supplier rating, Sourcing, Supplier certification
- Quality Control Tools
  - Check Sheet,
  - Histogram, Shapes of histogram, Drawing a histogram,
  - Pareto Chart, Drawing a Pareto chart,
  - Cause & Effect Diagram, Scatter Diagram, Control charts
- Statistical Quality Control
  - Defining Statistical Quality Control, Understanding the Process,
  - Variations and Causes of Variations,
  - Acceptable Sampling, Sampling methods, Probability based sampling , Non-probability based sampling, Acceptance sampling plans,
  - Control Charts, Process Capability, Process Capability Index, Six Sigma

Module V: Quality Management System and Benchmarking

- Quality Management System
  - Quality Management Principles,
  - ISO 9001 Structure,
  - Quality Audits,
  - ISO Registration, Requirements, Benefits of ISO registration,
  - Examples of ISO Standard Application
- Benchmarking
  - Definition of Benchmarking,
  - Reasons for Benchmarking,
  - Types of Benchmarking,
  - Benchmarking Process,
  - Advantages of Benchmarking,
  - Limitations of Benchmarking

Module VI: Employee Involvement, Team Building & Quality Awards

- Employee Involvement and Team Building
  - Importance of Employee Involvement,
  - Empowerment,
  - Motivation & Theories of Motivation,
  - Recognition and Reward,
  - Suggestion System,
  - Teams in Organizations
- Quality Awards
  - Malcolm Baldrige National Quality Award,
  - Deming Prize-categories-criteria-committee,
  - Rajiv Gandhi National Quality Award- Eligibility requirements- Award categories-Assessment criteria,
  - IMC Ramkrishna Bajaj National Quality Awards, Award categories, Award criteria,
  - Quality Bodies in India,
  - EFQM award

- ***Reference Books:***
- Best Quality management systems by written by James O. Westgard, PHD and Sten Westgard