



A T M E
College of Engineering



Quality Assurance & Quality Control (BCV657D)

Prof. Likhith M L
Assistant Professor
Dept of Civil Engineering
ATMECE, Mysuru

MODULE 2 – QUALITY MANAGEMENT

- Meaning and scope
- Quality planning, assurance, control
- Continuous improvement
- Quality management systems

Meaning of Quality Management

- Ensures products and services meet quality standards
- Minimizes defects and waste
- Improves business performance

Components of Quality Management

- Quality Planning – “Failing to plan is planning to fail”
- Quality Assurance – Prevention of defects
- Quality Control – Detection of defects
- Continuous Improvement – Ongoing excellence

Quality Planning

- Establishes quality objectives
- Identifies standards and procedures
- Aligns customer and regulatory requirements

Quality Assurance in QM

- Process standardization
- Training and audits
- Compliance with ISO standards

Quality Control in QM

- Inspection and testing
- SPC, RCA, FMEA
- Product and process verification

Continuous Improvement

- Six Sigma
- Lean
- Kaizen
- PDCA cycle



PDCA Cycle

- Plan – Identify problem
- Do – Implement solution
- Check – Evaluate results
- Act – Standardize improvement

Quality Management Systems (QMS)

- ISO 9001 – General QMS
- IATF 16949 – Automotive
- GMP – Pharma and food
- Lean and Six Sigma systems

Quality Management Methodologies

- Total Quality Management (TQM)
- Six Sigma (DMAIC)
- Lean Management
- Kaizen

Total Quality Management (TQM)

- Organization-wide quality approach
- Customer focus
- Employee involvement
- Continuous improvement

Vision and Quality Policy

- Commitment to quality
- Customer satisfaction
- Continuous improvement
- Compliance with standards

Quality Function Deployment (QFD)

- Converts customer needs into specifications
- Voice of Customer (VoC)
- Improves product design

Benchmarking

- Comparison with best performers
- Identifies improvement opportunities
- Enhances competitiveness

ISO 9000 Series

- ISO 9001 – Quality Management
- Process approach
- Risk-based thinking
- Documentation and audits

ISO 14000 – Environmental Management

- Environmental policy and planning
- Legal compliance
- Waste and resource management
- Continuous monitoring

Reasons for Poor Quality

- Lack of standardization
- Weak quality culture
- Inadequate supplier quality
- Poor process control
- Lack of training
- Outdated technology

Summary

- Quality management is strategic and systematic
- QA and QC are integral components
- Continuous improvement ensures excellence