

**4PE03:QUALITY MANAGEMENT**  
**CREDITS -4 (LTP: 3, 0, 1)**

**Course Objective:**

The course aims to impart basic knowledge about various aspects of Quality Management. The subject provides students with the concepts, fundamentals and techniques required to improve product quality and process efficiency by identifying and measuring production process variability.

**Teaching and Assessment Scheme:**

Teaching Scheme (Hours per Week)			Credits	Assessment Scheme				Total Marks
L	T	P		Theory Marks		Practical Marks		
			ESE	CE	ESE	CE	150	
3	0	2	4	60	40	20		30

**Course Contents:**

Unit No.	Topics	Teaching Hours
1	<b>Introduction:</b> Concept of quality and quality management philosophies, dimensions of quality, quality control and quality assurance, quality and productivity, cost of quality, responsibility for quality, strategic quality management, benchmarking.	06
2	<b>Total Quality Management (TQM)</b> W. Edwards Deming's contribution to TQM, Juran's contribution to TQM, Crosby's contribution to TQM, Ishikawa's contribution to TQM, Total Productive Maintenance (TPM).	06
3	<b>Statistical Quality Control</b> Quality control-its introduction and benefits, variation in processes: factors, process capability & its analysis, control charts for variables and attributes, establishing & interpreting control charts, concept of acceptance sampling, sampling by attributes, single and double sampling plans, inspections by samples, AQL, LTPD, consumers and producer's risk, construction and use of operating characteristic curves, use of standard sampling tables and related IS, sampling by variables, continuous sampling plan, vendor ratings.	08
4	<b>Acceptance Sampling:</b> Need for Acceptance Sampling, advantages and disadvantages, sampling by attributes and variables, operating characteristics (OC) curve, sampling related terminology and their interpretation, types of sampling plans, single and double sampling plans, standard sampling system for attributes, sequential, chain and continuous sampling, acceptance sampling by variables.	09

<b>Unit No.</b>	<b>Topics</b>	<b>Teaching Hours</b>
5	<b>Six sigma and Experimental design</b> Meaning of Six sigma, the seven magnificent quality tools, introduction of experimental design, Taguchi method in experimental design, concept, application of QFD, case studies.	09
6	<b>Quality Standards and business excellence models</b> Quality system standards, Bureau of Indian Standards, Agmark Grading and standardization, Quality council of India, International Organization for Standardization, conformance to specifications, quality assurance, Quality Circles, quality audits, ISO 14000, Customer Operations Performance Centre (COPC) 2000.	04
<b>Total</b>		<b>42</b>

**List of References:**

1. Kanishka Bedi, “*Quality Management*”, Oxford University Press, New Delhi
2. Amitava Mitra, “*Fundamentals of Quality Control and Improvement*”, Wiley India Pvt. Ltd., New Delhi
3. Dale H Besterfield, “*Total Quality Management*”, Pearson Education.
4. P N Mukharjee, “*Total Quality Management*”, Prentice Hall India.
5. M Mahajan, “*Statistical Quality Control*”, Dhanpai Rai & Sons, New Delhi.
6. D D Sharma, “*Total Quality Management*”, Sultan Chand & Sons.

**Course Outcomes (COs):**

At the end of this course students will be able to ...

1. Realize the significance of quality.
2. Understand and apply the concepts of Total Quality Management.
3. Understand and utilize Statistical Process Control (SPC) data to improve processes, production controls, production planning and decision making.
4. Use and apply quality improvement tools and techniques.
5. Apply knowledge of quality standard for quality management.