

Branch Name:	Mechanical Engineering(Production Technology)
Program Code:	ET209
Course Name:	Quality Control and Reliability- Practical
Course Code:	2ET2090403P
Pre-requisite Course:	Zeal to learn Subject

Course Objectives:

1. To make students understand and appreciate the importance of quality control and reliability analysis in industrial system.
2. To understand the basic concepts of Quality Circle: its objectives, structure and techniques.
3. To impart the knowledge to the students about various Design of Sampling Plans and Control Charts.
4. To impart the knowledge to the students about T.Q.M., Q.F.D., ISO-9000, Six Sigma and their applications in Manufacturing and Service Sectors.
5. To understand the basic fundamentals of Reliability Engineering and apply them to know about the practical aspects of Industrial World.

Teaching and Examination Scheme:

Credit	Teaching Scheme Hours per week				Evaluation Scheme (Marks)								Total (Marks)
					Theory (Marks)				Practical (Marks)				
	L	T	P	Total	SEE		CCA		SEE		CCA		
					Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
01	-	-	02	2	-	-	-	-	10	25	10	25	50

Subject Contents:

Sr. No	Detail of Practical	Contact Hours
1	Introduction to Quality Control.	02
2	Review of fundamental statistical concepts	02
3	Study of Sampling Techniques.	02
4	Hands on Sampling Technique.	04
5	Study of the ISO 9000 family of standards	02
6	Overview of Six Sigma for Total Quality Management	02
7	Study of Total Productive Maintenance	02
8	Study of various Reliability Determination Methods	04
9	Assignments	

List of Reference Books:

1. Grant E L, “Statistical Quality Control “, McGraw-Hill.
2. Shrinath L S, “Reliability Engineering” Affiliated East west press.
3. Besterfield D H, “Quality Control”, Prentice Hall.
4. Sharma S C, “Inspection Quality Control and Reliability”, Khanna Publishers.
5. Prabhakar Murthy D N and Marvin R, “Product Reliability”, Springer-Verlag.
6. Dana Crowe and Alec Feinberg, “Design for Reliability”, CRC Press.
7. Reliability Engineering by E. Balagurusamy

Course Learning Outcomes (CLO): On completion of this course, the students will be able to:

CLO	Description	Bloom’s Taxonomy Level
CLO1	Understand the fundamentals of Quality control and reliability analysis in industrial system.	1 Remembering 2 Understanding
CLO2	Understand basic statistical concepts, decision preparatory of the control charts and applications and apply them in real problems.	2 Understanding 3 Applying 5 Evaluating
CLO3	To apply Total Quality Management in order to improve quality continuously.	3 Applying 4 Analyze 5 Evaluating
CLO4	Understand the concepts of Acceptance Sampling, Sampling Plans and their applications.	2 Understanding 4 Analyze
CLO5	Understand the Reliability and its relationship with Availability and Maintainability.	2 Understanding 5 Evaluating
CLO6	Able to apply Reliability Engineering to Industrial World.	4 Analyze 6 Creating

Mapping of CLOs with POs & PSOs:

Course Learning Outcomes	Program Outcomes (POs)												Program Specific Outcomes(PSOs)	
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CLO1	M					L					M		M	
CLO2		M	L					M				M		L
CLO3	H	H		M	L		L						H	
CLO4	M			L				L				M		L
CLO5	M	L				L			M	M			M	
CLO6		M	M	L	M		L				M		M	

H:High, M:Medium, L:Low