

### ME312 Quality Management & Six Sigma Applications

L	T	P	Credit	Area		CWS	PRS	MTE	ETE	PRE
3	0/1	2/0	4	DEC/GEC		15/25	25	20/25	40/50	-

**Objective:** To enable the students to understand the fundamentals of quality, quality planning and quality costs. To understand concept of statistical process control, Sampling process, ISO standards and Six Sigma.

Syllabus			Contact Hours
<b>Unit-1</b>	<b>Introduction to Quality</b> Definition of Quality- product, user, value, and manufacturing based perspectives, Dimensions of Quality, Quality Planning, Quality costs optimization of quality costs, Quality in manufacturing, services, health care, educational systems, the seven tools of quality.		8
<b>Unit-2</b>	<b>Philosophies in Quality Management Systems</b> Philosophies of Quality Gurus- Deming, Juran, Crosby, Feigenbaum, Ishikawa, Taguchi. Comparison of Quality Philosophies; Quality Management awards- Deming prize, Malcolm Baldrige National Quality Award, Kirloskar Award.		8
<b>Unit-3</b>	<b>Statistical Process Control</b> Introduction to Quality characteristics- variables and attributes, Types and causes of variations, Control Charts for variables and attributes, Process capability.		6
<b>Unit-4</b>	<b>Acceptance Sampling</b> Sampling process and lots formation; Advantages and applications of acceptance sampling; characteristics of O.C. Curve; Single, double, multiple, sequential sampling; ASN, ATI, AOQL, AOQ, AQL, LQL, Producer's and Consumer's risks.		8
<b>Unit-5</b>	<b>ISO 9000:2000</b> Structure of ISO standards, Factors leading to ISO, Implementation and registration, Benefits of ISO.		6
<b>Unit-6</b>	<b>Six Sigma</b> Principles of Six Sigma, Statistical basis, Tools and techniques, DMAIC principle, application of six sigma in manufacturing and service organizations.		6
	<b>Total</b>		42

#### Reference Book:

1	The Management and Control of Quality by J R Evans and W M, Lindsay, Cengage learning, India, ISBN-0538882425, 1998.
2	Quality Management by Kanishka Bedi, Oxford
3	Total Quality Management by Bester field, Pearson Education.
4	Jura's Quality Planning and Analysis for Enterprise Quality, by F M Gryna, R C H Chua, J A Defeo, Tata McGraw Hill

**Course Outcomes**

CO1	Understand the fundamental principles of Total Quality Management
CO2	Choose appropriate statistical techniques for improving processes
CO3	Develop research skills that will allow them to keep abreast of changes in the field of Total Quality Management
CO4	Understand the fundamental principles of six sigma
CO5	Choose appropriate six sigma techniques for improving processes
CO6	Develop research skills that will allow them to keep abreast of changes in the field of six sigma

**CO-PO/PSO Matrix**

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	3	2	2	0	0	0	0	0	0	2	2	1	1
CO2	3	3	2	3	1	0	0	0	0	0	0	1	2	1	1
CO3	3	3	3	3	1	0	0	0	0	0	0	2	3	3	2
CO4	3	3	3	3	1	0	0	0	0	0	0	1	3	3	2
CO5	2	2	2	2	2	0	0	0	0	0	0	1	2	2	2
CO6	3	3	3	2	2	0	0	0	0	0	0	2	2	1	1