Course Type	Course Code	Name of Course	L	T	P	Credit
DE	NMSD526	**Quality Management**	3	0	0	3

Course Objective
To learn the basic concepts of quality management, statistical quality control and six sigma and their applications.
Learning Outcomes
Upon successful completion of this course, students will be able: • To learn the basic concepts of quality and quality management from organizational point of view. • To learn the concept of quality management from western and Japanese approach. • To be aware of international/national Quality awards. • To learn basic concepts of statistical quality control and six sigma methodology.

Unit No.	Topics to be Covered	Lecture Hours	Learning Outcome
1	Evolution of Quality, Basic concepts of Quality, Role of Quality in an organization, Quality Characteristics and Quality Measures, Dimensions of Quality, Consequences of poor Quality. Quality improvement process, Quality planning process, Quality control process, Cost of Quality, Trade-off between Quality of Design and Control. Quality management systems (ISO 9000 series), Environment management system (ISO 14000 series), Quality assurance audits	8	After completing this section student should able understand the evolution and history of Quality Management, various costs related to poor quality and basics of quality control and improvement process, various ISO systems used in organizations and also importance of quality audits.
2	Continuous process improvement, Total Quality Management (TQM), Benchmarking, Quality function deployment, Statistics as a basis for Quality Control, Statistical tools, Normal distribution, Binomial distribution, Poisson distribution, Sampling inspection, Acceptance sampling plans, Operating characteristics curve.	8	After completing the section student should able to understand concepts of Total Quality Management and its importance and also about the application of Quality Function Deployment. Student should able to apply various statistical tools and distribution for quality management in the organization.
3	Quality Control tools, Control charts for variables, Control charts for attributes, Statistical process capability analysis, Special Quality Control Charts	12	After completing this section student should be able to apply various quality control charts for monitoring and controlling quality in the organization.
4	Six Sigma concepts, DMAIC methodology, Project selection for six sigma, Tools and techniques for six sigma.	4	After completing this section student should be able to understand the need, importance and application of six sigma methodology in the organization.
5	Design of Experiments for Quality management, Taguchi method, Reliability and failure analysis.	10	After completing this section student should be able to understand the concept of design of experiments for quality management and also techniques for measuring reliability of the machines.
	Total Lecture Hours	**42**	

Text Books:

• Juran's Quality Planning and Analysis for Enterprise Quality by Frank Gryna, Richard Chua and Joseph Defeo, McGraw Hill Education, 5th edition

• Fundamentals of Quality Control and Improvement by Amitava Mitra Wiley, 3rd edition

Reference Books:

• Total Quality Management by Dale Besterfield, Pearson, 5th edition