Course Type	Course Code	Name of Course	L	T	P	Credit
DE	NMED533	Quality Engineering and Management	3	0	0	3

Course Objective
The objective of the course is to improve quality and productivity of products and services in order to compete and excel in the international market.
Pre-requisite:
Students must had studied manufacturing subjects such as casting, welding, and machining in undergraduate.
Learning Outcomes
Upon successful completion of this course, students will: • Be able to understand quality of products and services • Be able to solve actual quality related problems by using statistical quality control techniques. • Be able to learn about aspects of quality management techniques. • Be able to solve problems related to quality management in the industry. • Be able to understand and use various quality management and associated standards as well as software in the industries.

Module	Topics	Lecture Hours	Learning Outcome
1	Introduction to Quality Engineering and Management	1	Learn basics of quality of products and services.
2	Control Charts: Chart types, types of sampling and acceptance sampling plans, normal distribution curve, process capability analysis.	9	Learn controlling deviations in the dimensions of quality characteristics of products and processes.
3	Definition and evolution of quality, contribution of Deming and Taguchi	7	Understanding of various definitions and history of quality and about quality experts
4	Quality costs, quality function deployment, business process re-engineering, quality management, total quality management: definition, philosophy, principles, vision, mission	8	Understanding quality improvement methodology.
5	Quality tools and techniques - Seven Tools of Quality, Seven Quality Management Tools, Six Sigma, Benchmarking, JIT, Poka-Yoke, 5S Campaign, Kaizen, Quality Circles	8	Learning basic statistical tools and various quality management concepts and techniques for application in the industries
6	Management Systems - Quality Management Principles as per ISO 9000, ISO 9001, ISO 14001, ISO 45001, their importance and case studies, introduction to SPSS/TQM Software.	9	Learn about international quality, environmental as well as occupational health and safety management standards and SPC/TQM software in order apply in the industries.
	Total	**42**	

Text books:

1. Statistical Quality Control, D. C. Montgomery. John Wiley & Sons, Inc., 7th Ed. 2013

2. Total Quality Management, Dale H. Besterfield, Pearson Education Reprint, 2011

References:

1. ISO 9000: 2015 Quality Management System-Fundamentals and Vocabulary
2. ISO 9001:2015 Quality Management System- Requirements with guidance for use

3. ISO 14001: 2015 Environmental Management System- Requirements with guidance for use
ISO 45001:2018 Occupational Health