

NIRMA UNIVERSITY
Institute of Management
Master of Business Administration (Full Time) Programme/
Integrated Bachelor of Business Administration-Master of Business
Administration Programme/
Master of Business Administration (Family Business &
Entrepreneurship) Programme

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Course Code	MFT5SEOQ12 MBM5SEOQ12 MFB5SEOQ10
Course Title	Statistical Techniques in Quality Control

Course Learning Outcomes (CLO):

At the end of the course, students will be able to:

1. Identify some of the basic concepts and practices in Total Quality Management.
2. Develop basic understanding of statistical methods used for quality improvement.
3. Identify an appropriate process sampling strategy.
4. Apply statistical process control tools for effective management decision making process.

Syllabus

Teaching Hours

Unit I: Introduction to Quality Management <ul style="list-style-type: none"> • Introduction to quality and quality improvement • Quality Improvement in the Modern Business Environment: Total Quality Management (TQM) • Six Sigma 	08
Unit II: Statistical Methods in Quality Improvement <ul style="list-style-type: none"> • Modelling Process Quality • Inferences about Process Quality 	06
Unit III: Statistical Process Control and Capability Analysis <ul style="list-style-type: none"> • Statistical Process Control (SPC): Methods and Philosophy of SPC • Control Charts for Variables • Control Charts for Attributes • Cumulative Sum and Exponentially Weighted Moving Average Control Charts • Process Capability Analysis 	08
Unit IV: Acceptance Sampling and Quality Control in Service Sector <ul style="list-style-type: none"> • Acceptance Sampling: Lot-by-lot Acceptance • Sampling by Attributes; Acceptance Sampling by Variables; • Quality Control in the Service Sector: Service Industry and their Characteristics; Applications. 	08

Suggested Readings:

1. Besterfield, D. H., Besterfield, M. C., Besterfield, G. H., Besterfield, M. S., Urdhwareshe, H., and Urdhwareshe, R., Total Quality Management, Pearson.
2. Krishnamurthy, K.S and Krishnamurthy, V. R., A First Course in Quality Engineering: Integrating Statistical and Management Methods of Quality, CRC Press.
3. Gitlow, H. S., Oppenheim, A. J., Oppenheim, R., and Levine, D. M., Quality Management, McGraw Hill.
4. Evans, J. R., and Lindsay, W. M., Managing for Quality and Performance Excellence, Cengage.
5. Evans, J. R., and Lindsay, W. M., An Introduction to Six Sigma & Process Improvement, Cengage.
6. Mitra, A., Fundamentals of Quality Control and Improvement, Wiley.
7. Wheeler, D. J., Understanding Statistical Process Control, SPC Press.
8. Oakland, J. S., Statistical Process Control, Butterworth-Heinemann.
9. Montgomery, D. C., Introduction to Statistical Quality Control, Wiley

w.e.f. Academic Year 2019-20 and onwards