

Module Code:	STAT-415
Module Title:	Total Quality Management (TQM) (Theory) – 3 Credit Hours
Name of Scheme:	BS Statistics (Specialization)

Course Outlines

The basics of Management. Defining Quality. Different views of Quality. Dimensions of Quality. Quality Management. Principles of Quality Management. Eras of Quality Management, their foci and major developments. Introduction to Total Quality Management, Basic concepts, Purpose, benefits and framework of TQM, Implementation of TQM. Barriers to TQM implementation, Guru's of TQM, their Philosophies and Pioneering Works. Customer satisfaction. Internal and External Customer, Customer perception of quality. Employee involvement, Quality Control Circles & Teams.

Continuous Process Improvement: The PDCA Cycle, Kaizen, Six Sigma, Japanese 5-S practice. DRIVE framework. Costs of Quality. Quality Function Deployment. Benchmarking: Reasons to Benchmark, Types of Benchmarking, Benchmarking process, Benefits of Benchmarking, Obstacles to successful Benchmarking. New and old tools of Quality Management.

Statistical Process Control: Statistical Control Charts, Statistical basis of the Control Chart, Steps in the development of control charts, Types of control charts, Process Capability. Acceptance Sampling: Lot by lot Acceptance Sampling for attributes. Types of Sampling Plans. Single Sampling Plans: Construction of OC-curve, Rectifying Inspection. Double and Multiple Sampling Plans.

Quality Management Systems: ISO 9000 Series of Standards: Requirements, Implementation & Benefits. Environmental Management System: ISO 14000 series of Standards: Requirements, Implementation and Benefits.

Books Recommended

1. Besterfield, D.H., Michna, C.B., Besterfield, G.H. & Sacre, M.B. (2003). *Total Quality Management* (3rd ed.). Pearson Education.
2. James, P. (1996). *Total quality management*. Prentice Hall.
3. Montgomery, D.C. (2009). *Statistical Quality Control* (6th ed.). John Wiley & Sons, New York.

Reference Books

1. Evans, J.R. & Lindsay, W.M. (2005). *The Management and Control of Quality* (6th ed.). Thomson South-Western.
2. Oakland, J.S. (2003). *Total Quality Management* (3rd ed.). Butterworth-Heinemann.
3. Grant, E.L. & Leavenworth, R.S. (1996). *Statistical Quality Control Handbook* (7th ed.). McGraw-Hill Book Company, New York.