

MEC 585: TOTAL QUALITY MANAGEMENT

INSTRUCTOR: Dr. Satya P. Sharma

COURSE DESCRIPTION:

American business continues to decline in world markets. Many domestic companies witnessed a decline in their market share as a result of their inability to compete on the basis of product and service quality. The only viable option available is to improve the quality of products and services to meet and exceed customer expectations if a company wants to survive in today's global economy. This can be achieved by Total Quality Management in all operations of an enterprise.

Helping students understand the fundamental concepts of TQM to attain world-class performance is the objective of this course. The course provides the skills necessary to have a successful TQM program in a company.

The course begins with an overview of the reasons why TQM management system is critical to the success of a business. We discuss the history of quality improvement from Walter Shewart to Deming and Juran and the emergence of Japan as a major industrial power. We then discuss the necessary tools which are critical in problem solving. We introduce the seven QC tools including Pareto, cause and effect diagram, scatter plots, control charts, etc. Quality Improvement methodologies are emphasized with examples and business cases. The concept of quality teams is strengthened by actual involvement of students in problem solving teams. The poka-yoke (mistake proofing) approach if quality improvement is also emphasized.

Students are then exposed to policy management component of TQM which helps align the organization around key, customer focused areas. "These areas are referred to as vital few. Policy management is a process of linking customer needs all the way from senior management to quality improvement teams to achieve breakthrough performance on those items which emphasize customer satisfaction, business, and employee needs. We also point out how to develop long-term and short-term plans, link them to the company's mission and vision, and how to develop and tract metrics.

The other major element of TQM emphasized in the course is Daily Management. This is to assure that the variations in day-to-day activities are reduced, and the improvement gains achieved through quality teams are standardized to become part of day-to-day operations. This process is very critical so that out of control conditions are kept to a minimum.

The course also addresses the Malcolm Baldrige criteria as well as ISO 9001 standards. Both of these are important for the companies that decide to challenge for the award or seek the ISO certification which needed to compete in various markets. Benchmarking is also addressed in the course.

Through a combination of case studies, lectures, and team projects, the course introduces powerful methodologies and tools to address critical manufacturing and business issues. The

challenges in implementation and lessons learned from other business are emphasized. We attempted to balance strategic needs with realities of the current situation.

COURSE REQUIREMENTS:

Students are required to read the assigned reading and analyze the assigned cases prior to each class. All homework problems must be completed and turned in before each class.

There will be some take home examinations, two group assignments, and several individual assignments. The University honor roll must be maintained in all examinations and submissions. The guidelines will be provided before each examination. The emphasis is on understanding of the subject material. In group assignments, it is assumed that all members will carry a fair share of the work.

CLASS PARTICIPATION:

For those present in class, students may be called upon to address issues presented in the case. Therefore, a thorough preparation of the assigned materials is necessary. The discussion should focus on the context and original thinking.

GRADING:

The final grade will be based on the quality of the exams and individual and group submissions.

- Individual Homework 20%
- Group Assignments 30%
- Examinations 40%
- Participation 10%

COURSE MODULE

I. Introduction and Overview	1 Lecture
II. Tools/Methods -7 QC Tools -Poka-Yoke	3 Lectures
III. Policy Management / Policy Deployment	2 Lectures
IV. Mid-Term	
V. Daily Work Management	2 Lectures
VI. MBA Criteria	2 Lectures
VII. Benchmarking	1 Lecture
VIII. ISO 9001	1 Lecture
IX. Final	

Student Accessibility Support Center Statement

If you have a physical, psychological, medical or learning disability that may impact your course work, please contact Student Accessibility Support Center, ECC (Educational Communications Center) Building, Room 128, (631)632-6748. They will determine with you what accommodations, if any, are necessary and appropriate. All information and documentation is confidential.

Academic Integrity Statement

Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty is required to report any suspected instances of academic dishonesty to the Academic Judiciary. Faculty in the Health Sciences Center (School of Health Technology & Management, Nursing, Social Welfare, Dental Medicine) and School of Medicine are required to follow their school-specific procedures. For more comprehensive information on academic integrity, including categories of academic dishonesty please refer to the academic judiciary website at http://www.stonybrook.edu/commcms/academic_integrity/index.html

Critical Incident Management

Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of University Community Standards any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn. Faculty in the HSC Schools and the School of Medicine are required to follow their school-specific procedures. Further information about most academic matters can be found in the Undergraduate Bulletin, the Undergraduate Class Schedule, and the Faculty-Employee Handbook.