



**ÇANKAYA UNIVERSITY**  
**Graduate School of Natural and Applied Sciences**  
**Master's Program in Industrial Engineering**  
**IE 510– Quality Management**

Spring 2025

**Instructor**

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**Teaching Assistant**

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**Course Schedule**

Wednesday 18:15- 21:10 (Computer Lab, A-309, on Balgat Campus)

**Office Hours**

(Will be announced)

**Textbook:**

**David L. Goetsch, Stanley Davis, *Quality Management for Organizational Excellence: Introduction to Total Quality*, 8/E, Prentice Hall, 2015, ISBN 9780133791853.**

This textbook provides a comprehensive introduction to quality management principles and total quality approaches. It covers foundational concepts, continuous improvement methodologies, strategic quality planning, and the application of quality tools in organizations. The book serves as the primary reference for lectures, assignments, and case studies throughout the semester.

**Additional Resources:**

Students are encouraged to supplement their learning with the following materials to gain deeper insights into quality management practices:

1. **Juran, J.M. & Godfrey, A.B.** (1998). *Juran's Quality Handbook* (5th Edition). McGraw-Hill.
  - A foundational reference covering quality management principles, strategic applications, and process improvements.
2. **Deming, W.E.** (1986). *Out of the Crisis*. MIT Press.
  - A classic text introducing Deming's 14 points and the philosophy of continuous improvement in quality management.
3. **Taguchi, G., Chowdhury, S. & Wu, Y.** (2004). *Taguchi's Quality Engineering Handbook*. Wiley.
  - A detailed reference on robust design and statistical experimental methodologies for process improvement.
4. **Pyzdek, T. & Keller, P.** (2014). *The Six Sigma Handbook* (4th Edition). McGraw-Hill.
  - A complete guide to Six Sigma methodologies, process improvements, and real-world applications.
5. **Related Websites:**
  - **ASQ (American Society for Quality) Publications & Case Studies**

- Articles, white papers, and case studies on contemporary quality management practices, available at [www.asq.org](http://www.asq.org).
- **International Organization for Standardization (ISO):** [www.iso.org](http://www.iso.org)
- **Harvard Business Review (HBR) - Quality Management Articles:** [www.hbr.org](http://www.hbr.org)
- **Lean Enterprise Institute:** [www.lean.org](http://www.lean.org)
- **MIT Sloan Management Review - Operations & Quality Articles:** [www.sloanreview.mit.edu](http://www.sloanreview.mit.edu)

Students are expected to explore these materials for further reading and research, especially for assignments and project work.

In addition to the textbook and supplementary readings, students will be provided with case studies, videos, and online reading materials relevant to quality management. These resources will help reinforce theoretical concepts and demonstrate real-world applications.

### Course Description:

This course provides a **comprehensive introduction to quality management principles, methodologies, and best practices**. It covers **both theoretical foundations and practical applications** to enhance students' ability to analyze, improve, and sustain quality in different industries.

Students will explore key topics such as **Total Quality Management (TQM), statistical quality control, Six Sigma, Lean manufacturing, ISO 9001, and quality management in service sectors**. The course emphasizes **customer satisfaction, leadership, teamwork, and continuous improvement methodologies**, integrating real-world case studies and industry applications.

By engaging with **case studies, hands-on exercises, and discussions**, students will gain a structured understanding of **how organizations implement and sustain quality management systems for business excellence**.

### Course Objectives:

By the end of this course, students will be able to:

- ✓ Understand the evolution and philosophy of quality management, including contributions from key pioneers such as Deming, Juran, and Crosby.
- ✓ Apply Total Quality Management (TQM) principles to develop a culture of continuous improvement within an organization.
- ✓ Utilize quality engineering techniques such as statistical process control, value stream mapping, and graphical quality tools for data-driven decision-making.
- ✓ Analyze customer satisfaction, retention, and loyalty and their impact on long-term business success.
- ✓ Evaluate the role of strategic management in achieving organizational excellence through quality-driven processes.
- ✓ Examine leadership and employee empowerment strategies for fostering a quality-oriented workplace culture.
- ✓ Develop teamwork and effective communication skills, essential for problem-solving and quality improvement initiatives.
- ✓ Understand international standardization and certification systems, including ISO 9001, EFQM, and other quality awards.
- ✓ Apply graphical tools for quality improvement, including Pareto charts, histograms, and cause-and-effect diagrams.
- ✓ Examine continual improvement methodologies, including Just-in-Time (JIT), Six Sigma, and Lean, and their applications in process optimization.

- ✓ Compare quality management systems across industries, identifying best practices for both manufacturing and service sectors.
- ✓ Develop implementation strategies for Total Quality Management (TQM) to enhance business efficiency and effectiveness.
- ✓ Explore alternative quality management systems beyond ISO 9001, including industry-specific and emerging quality frameworks.
- ✓ Apply ethical considerations and quality standards to real-world challenges in quality management.

### Course Learning Outcomes:

On successful completion of this course unit, students/learners will or will be able to:

- ✓ Knowledge of quality management and related systems.
- ✓ Skill in using tools for quality improvement
- ✓ Skill in use of statistical software packages for quality analysis.
- ✓ Ability to prepare a report based on a case study
- ✓ Ability to conduct research and present a quality management system standard
- ✓ Involved in team work.
- ✓ Aware of ethical issues.

### Tentative Course Topics:

A tentative outline of the topics is provided below. Please note that the instructors reserve the right to make changes to the topics and schedule as necessary:

Week	Topic
1	History and Philosophy of Quality
2	Total Quality Management
3	Quality Engineering Techniques
4	Strategic Management
5	Customer Satisfaction, Retention, and Loyalty
6	Employee Empowerment, Leadership And Change
7	Teamwork and Effective Communication
8	Standardization, Certification and Quality Awards
9	ISO 9001 Quality Management System
10	Graphical Tools for Quality Improvement
11	Continual Improvement Methods With Just-In-Time, Six Sigma and Lean
12	Quality Management in Service Sector
13	Implementing Total Quality Management
14	Other Quality Management Systems

### Course Web Page:

A course web page will be available at <https://webonline.cankaya.edu.tr>. Students should regularly access this page for updates on class announcements, lecture notes, and assignments. Lecture slides may not cover all in-class discussions and problem solutions, so students are encouraged to attend classes and take detailed notes.

### Grading (\*):

Midterm and final exams will be held according to the university policies. Please follow the university web page for any update/change on how exams will be held.

<i>Method</i>	<i>Number</i>	<i>Contribution (%)</i>
Midterm	1	25%
Final Exam	1	35%
Homework	2	10%
Case Study	1	15%
Oral Presentation	1	15%

(\* ) Instructor reserves the right to change the grading policy

### Classroom Policy:

Students are expected to maintain a professional and respectful environment in class. Disruptive behavior, including the use of mobile devices for non-course-related purposes, will not be tolerated. Participation in discussions and problem-solving exercises is highly encouraged to enhance learning.

You are responsible for all announcements made in class and on the class web page, as well as printing the lecture notes and other cited materials from the class web page and other sources.

### Honesty Policy:

Academic integrity is expected of students of Cankaya University at all times, whether in the presence or absence of the faculty. All students should declare their understanding and belief in the Honor Code for the examinations and assignments. This statement is a reminder to uphold your obligation as a student and to be honest in all work submitted and exams taken in this course and all others.

If you conduct any dishonest act during an examination or for the completion of an assignment (i.e., cheating on an exam, using any extra material that you are not allowed to use during an exam, copying material off of someone else's homework or assignment, using solution keys from previous years, copying material from published and electronic sources without paraphrasing and/or citing appropriately), you will get a credit of zero on that particular exam or assignment. Necessary disciplinary action, as dictated by the rules of the University, will also be taken.

### Make-up Policy:

A make-up examination for the midterm or final exam will only be given under exceptional circumstances (such as serious health problems). The student must contact the instructor as early as possible and provide proper documentation (e.g., a medical report certified by Çankaya University's Health Center).

### Attendance:

Attendance will be recorded manually at the start of each class session. Students are required to sign the attendance sheet to confirm their presence. Failure to sign the sheet will result in the student being marked absent for that session.

Students are required to attend **at least 70% of the lecture hours** to be eligible to take the final exam. Failure to meet this requirement will result in the letter grade **NA (Not Attended)**, meaning the student will not be allowed to take the final exam and will not receive a passing grade for the course.

Although the minimum requirement is 70% attendance, students are strongly encouraged to attend all classes to fully understand the material and perform well in class activities and quizzes.

### Conditions that Lead to an "NA" Grade:

Any of the following may lead to receiving the letter grade **NA (Not Attended)**:

- If a student fails to attend at least **70%** of the lectures, they will not be allowed to take the final exam and will receive a grade of **NA**.
- If a student fails to take the **midterm exam** or the **final exam** without valid documentation, they will receive the letter grade **NA**.

If a student achieves a grade of **DD** or higher after completing all exams, and assignments but has less than the required attendance, they may still pass the course conditionally, depending on their overall GPA, as per university regulations.

**Changes to the Syllabus:**

The instructor reserves the right to make changes to the syllabus as necessary. Any changes will be announced on the course website.