ÇANKAYA UNIVERSITY
Department of Industrial Engineering

IE 428 – Quality Management Systems
Fall 2022-2023

Instructor:

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Course Schedule:

Every Monday 14:20-17:10 (HA-02)

Textbook:

- David L. Goetsch and Stanley Davis **Quality Management for Organizational Excellence: Introduction to Total Quality**, 8/E , Prentice Hall, 2015
- Lecture Slides and Notes

Reference Books:

- Rao, Carr, Dambolena, Kopp, Martin, Rafii, Schlesinger, **Total Quality Management: A Cross-Functional Perspective,** John Wiley & Sons, Inc., 1996
- David Hoyle, **Quality Management Essentials**, Elsevier, 2007
- Alexander Osterwalder & Yves Pigneur, **Business Model Generation**, Wiley, 2010
- Jamshid Gharajedaghi, **Systems Thinking: Managing Chaos and Complexity,** MK Elsevier, 2011
- Daniel Simon, **Business Architecture Management,** Springer, 2015
- Jan Mendling, **Metrics for Process Models,** Springer, 2008
- EFQM, **Framework for Corporate Data Quality Management,** 2010
- Mark von Rosing, **The Complete Business Process Handbook_ Body of Knowledge from Process Modeling to BPM**, Morgan Kaufmann, 2014
- *Lecture slides may include materials from reference books and other sources in addition to the textbook.*

Course Description:

This course will cover the below concepts, frameworks and competencies: Introduction to Quality; Quality Concepts and Quality Paradigms; Total Quality Management; Quality by Planning; Quality by Design, Quality by Improvement and Control; Organizing for Quality; Creating Quality; Quality Management Systems; ISO 9001 Quality Management System and related third part standards; Implementing a Quality Management System; Topics for the Contemporary Quality Management Systems

Course Objective:

Quality Management Systems (QMS) is closely aligned with any socio-technological systems i.e. manufacturing, service enterprises, public governance agencies and even non-profit organizations to enable efficiencies, performance, innovation, planning and business models. However, still much of the market isn't correctly focusing on quality, since many efforts are still required to solve severe problems: inefficiency, waste and loss caused by fragmented and skewed systems, manual metrics calculations, teams independently performing quality work with minimal cross-functional ownership, and ineffective customer and supplier communication, among others.

This main objective of this course is empowering and enlightening the students to their future quality manager and change leader roles by an effective elaboration of quality management systems theory and practice. Accordingly, the concepts of productivity, value creation and evidence/information based system thinking, design, planning, modelling and improvement are emphasized in the course in supporting an industrial engineering impact to real life problems.

Tentative Course Schedule:

Week	Topic(s)
1	Introduction to Quality
2	Quality Concepts and Quality Paradigms (Deming, Juran, Crosby)
3	Total Quality Management (Productivity Approaches)
4	Quality by Planning (Strategic Management, Strategy Maps)
5	Organizing by Architecture (Systems Thinking, Business Architecture,)
6	Quality by Design (Customer Focus, Design Thinking)
7	Quality by Improvement and Control -1 (Process Focus, Kaizen, Process Control, Six Sigma, Variation, Capability, Cost of Quality, Loss Function)
8	General Review prior to Midterm & Detailed Presentation of Term Project
9	Quality by Improvement and Control - 2 (Business Process Management)
10	Measuring and Decision Making for Quality -1 (Problem Solving and Decision-Making Tools)
11	Measuring and Decision Making for Quality -2 (Benchmarking, Performance Management)
12	Quality Management Systems (Standardization and Maturity Models, EFQM Excellence Model)
13	ISO 9001 Quality Management System's Key Concepts and requirements and basics of related standards i.e., ISO14001, ISO45001, ISO 15504, COBIT, ITIL
14	Implementing Quality Management Systems (Organizational Change, Excellence, Learning and Transformation)

Course Web Page:

A web page will be available for this course at https://webonline.cankaya.edu.tr . You will need to access this web page for announcements about class, lecture notes, and assignments. A copy of the lecture slides will be posted on Moodle at the beginning of every week. These lecture slides may not contain all the discussion, examples, and solutions to the problems solved in the class; you are expected to use the slides to go over the plan of the week and to take notes during the class.

Grading:

Midterm or Equivalent Assignment	25 %
Final Exam	35 %
Case Study Project	30 %
Homework (s)	10 %
Total	100 %

Attendance:

Attendance will be collected during the lectures and recitations. It is strongly recommended to attend all the lecture hours to understand the course material.

Homework:

There will be **up to two** homework assignments related to the topics discussed in the classrooms. Use of MS Office tools might be required for homework assignments. Homework assignments are due on Sunday of the submission week at 23:55 and should be uploaded to the course website (not to the teaching assistant). Homework assignments will be submitted **individually**. Plagiarism (copying), is strongly not recommended and will be charged by a 5 percent deduction from the examination grades.

Case Study Project and Presentation

There will be a "Case Study" for the application of frameworks reviewed in this course. Guidelines for the Case Study project are provided on the course website. A Case Study report is required for written presentation. In week 5, students should form their groups and inform the course assistant by e-mail. The deadline for group formation is Friday of week 6 at 23:55. Groups will preferably include four or five students. Those who do not/cannot form a group will be grouped by the instructor. These groups will be valid only for the project and presentation. Detailed information about the content of the project will be announced on the course website after the add-drop date.