

COURSE INFORMATION					
Course Title	Code	Semester	L+P+L Hour	Credits	ECTS
QUALITY CONTROL AND QUALITY MANAGEMENT IN CONSTRUCTIONS	CE 563	-	3+0+0	3	10

<b>Prerequisites</b>	
----------------------	--

<b>Language of Instruction</b>	English
<b>Course Level</b>	Master's Degree (Second Cycle Programs)
<b>Course Type</b>	Departmental Elective
<b>Course Coordinator</b>	Assist. Prof. Dr. Özgür Köylüoğlu
<b>Instructors</b>	Assist. Prof. Dr. Özgür Köylüoğlu
<b>Assistants</b>	-
<b>Goals</b>	The goal of this course is to help students develop a quality management system framework, a quality control procedure using applicable standards, codes and practice necessary for various areas of construction work.
<b>Content</b>	Quality control methods; quality control in constructions; design standards; construction standards, preparation of technical specifications; tests and commissioning.

Course Learning Outcomes	Program Learning Outcomes	Teaching Methods	Assessment Methods
1) Ability to describe quality control methods	8, 9, 10, 11, 12	1,2	A, B
2) Ability to interpret quality standards and codes	8, 9, 10, 11, 12	1,2	A, B
3) Ability to develop specifications	1, 2, 3, 8, 9, 10, 11, 12	1,2	A, B
4) Ability to prepare quality control procedures	1, 2, 3, 8, 9, 10, 11, 12	1,2	A, B

<b>Teaching Methods:</b>	1: Lecture, 2: Class discussion
<b>Assessment Methods:</b>	A: Written Exam, B: Homework, C: Term Project

COURSE CONTENT		
Week	Topics	Study Materials
1	Introduction and Definitions	Lecture Notes and Textbook
2	Measuring Performance	Lecture Notes and Textbook
3	Quality Standards	Lecture Notes and Textbook
4	Quality in Design	Lecture Notes and Textbook
5	1 <sup>st</sup> Midterm Exam	Lecture Notes and Textbook
6	Quality and Environmental Management Systems	Lecture Notes and Textbook
7	Quality Management for Health and Safety on Construction Projects	Lecture Notes and Textbook
8	Performance Evaluation	Lecture Notes and Textbook
9	Process Management	Lecture Notes and Textbook
10	2 <sup>nd</sup> Midterm Exam	Lecture Notes and Textbook
11	Implementing Total Quality Management	Lecture Notes and Textbook
12	Communications and Learning	Lecture Notes and Textbook
13	Continuous Improvement	Lecture Notes and Textbook
14	Benchmarking and Change Management	Lecture Notes and Textbook
15	BIM and Quality Management	Lecture Notes and Textbook

RECOMMENDED SOURCES	
<b>Lecture Notes</b>	Notes prepared by the instructor
<b>Textbook</b>	<p><b><u>Construction Quality Management: Principles and Practice</u></b>            Authors: T. Howarth, D. Greenwood; Routledge, 2017</p> <p><b><u>Total Quality in the Construction Supply Chain</u></b>            Authors: J. Oakland, M. Marosszeky, Routledge, 2006</p> <p><b><u>Total Construction Management: Lean Quality in Construction Project Delivery</u></b>            Authors: J.S. Oakland, M. Marosszeky, Routledge, 2017</p>

<b>MATERIAL SHARING</b>	
<b>Documents</b>	Lecture notes delivered to the students
<b>Assignments</b>	Homeworks are returned to students after they are graded
<b>Exams</b>	Exams questions are solved if demanded

<b>ASSESSMENT</b>			
	<b>IN-TERM STUDIES</b>	<b>NUMBER</b>	<b>PERCENTAGE</b>
Mid-terms		2	60
Assignment		6	20
Term Project		1	20
<b>Total</b>			<b>100</b>
<b>CONTRIBUTION OF FINAL EXAMINATION TO OVERALL GRADE</b>			40
<b>CONTRIBUTION OF IN-TERM STUDIES TO OVERALL GRADE</b>			60
<b>Total</b>			<b>100</b>

<b>COURSE CATEGORY</b>	Expertise/Field Courses
------------------------	-------------------------

<b>COURSE'S CONTRIBUTION TO PROGRAM</b>						
No	Program Learning Outcomes	Contribution				
		1	2	3	4	5
1	Attains knowledge through wide and in-depth investigations his/her field and surveys, evaluates, interprets, and applies the knowledge thus acquired.				√	
2	Has a critical and comprehensive knowledge of contemporary engineering techniques and methods of application.				√	
3	By using unfamiliar, ambiguous, or incompletely defined data, completes and utilizes the required knowledge by scientific methods; is able to fuse and make use of knowledge from different disciplines.			√		
4	Has the awareness of new and emerging technologies in his/her branch of engineering profession, studies and learns these when needed.					
5	Defines and formulates problems in his/her branch of engineering, develops methods of solution, and applies innovative methods of solution.					
6	Devises new and/or original ideas and methods; designs complex systems and processes and proposes innovative/alternative solutions for their design.					
7	Has the ability to design and conduct theoretical, experimental, and model-based investigations; is able to use judgment to solve complex problems that may be faced in this process.					

8	Functions effectively as a member or as a leader in teams that may be interdisciplinary, devises approaches of solving complex situations, can work independently and can assume responsibility.	√			
9	Has the oral and written communication skills in one foreign language at the B2 general level of European Language Portfolio.				√
10	Can present the progress and the results of his investigations clearly and systematically in national or international contexts both orally and in writing.				√
11	Knows social, environmental, health, safety, and legal dimensions of engineering applications as well as project management and business practices; and is aware of the limitations and the responsibilities these impose on engineering practices.				√
12	Commits to social, scientific, and professional ethics during data acquisition, interpretation, and publication as well as in all professional activities			√	

#### ECTS ALLOCATED BASED ON STUDENT WORKLOAD BY THE COURSE DESCRIPTION

Activities	Quantity	Duration (Hour)	Total Workload (Hour)
Course Duration (Excluding the exam weeks: 13x Total course hours)	13	3	39
Hours for off-the-classroom study (Pre-study, practice)	13	3	39
Midterm examination	2	2	20
Homework	6	15	90
Term Project	1	40	40
Final examination	1	2	14
<b>Total Work Load</b>			242
<b>Total Work Load / 25 (h)</b>			10
<b>ECTS Credit of the Course</b>			10