



**T.C. ESKİŞEHİR OSMANGAZI UNIVERSITY
ENGINEERING AND ARCHITECTURE FACULTY
MECHANICAL ENGINEERING DEPARTMENT**

COURSE INFORMATION FORM

SEMESTER	Spring
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COURSE CODE	1518xxxxx	COURSE NAME	Quality Control and Metrology
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SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Laboratory	Credit	ECTS	TYPE	LANGUAGE
7	3	0	0	3	5	COMPULSORY () ELECTIVE (X)	TURKISH

COURSE CATAGORY

Basic Science	Basic Engineering	Engineering Subjects [if it contains considerable design, mark with (√)]	Social Science
		 X	

ASSESSMENT CRITERIA

	Evaluation Type	Quantity	%
	MID-TERM	Mid-Term	1
Quiz			
Homework		1	20%
Project			
Report			
Others (.....)			
FINAL EXAM		1	50%

PREREQUIEITE(S)

COURSE DESCRIPTION

The scope will cover quality and evolution of quality concept, quality management/assurance system standards, total quality management, essence of quality control in the manufacturing chain, quality control measurement tools in manufacturing and calibration, computer aided quality control and automation; quality tools and statistical process control, metrology for machine tools.

COURSE OBJECTIVES

The main objective of this course is to explain the essence of quality control and related methods in the manufacturing giving the evolution of quality concept together with the theory of quality tools and statistical process control. Moreover, it is aimed to provide skills in diagnosing and analyzing problems causing variation in manufacturing and service industry processes as well as a basic understanding of widely-used quality analysis tools and techniques.

ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION

Problem description ability in the field of quality closely linked to manufacturing; ability to solve quality problems by data analysis and to interpret of results using quality techniques.

COURSE OUTCOMES

1. Ability to analyze and interpret engineering data,
2. Ability to understand and establish interactions and links between variables,
3. Learn the essence and historical evolution of quality,
4. Ability to identify the sources of quality problems and priority,
5. Ability to select and apply suitable quality graphs,
6. Competence to use statistical tools,
7. Learn computer aided measurement techniques and automation,
8. Learn machine tool metrology and ability to apply for analysis.

TEXTBOOK	Burnak, N. (1997): Toplam Kalite Kontrolü : İstatistiksel Süreç Kontrolü, Osmangazi Üniv.,TEKAM yayın no:TS-97-008-NB, Eskişehir.
OTHER REFERENCES	Montgomery D.C. (2005) : Introduction to Statistical Quality Control, John Wiley & Sons, Inc., NewYork. Sowers, Essentials of Quality, Wiley, c.2011 Dale H. Besterfield, et. al. Total Quality Management, Prentice Hall, 2003.
TOOLS AND EQUIPMENTS REQUIRED	Access to Microsoft Excel

COURSE SYLLABUS	
WEEK	TOPICS
1	Quality concept, basics, historical evolution and recent applications
2	Total Quality Control
3	Total Quality Management
4	Quality Circles
5	Essence of Quality Control in the Production
6	Essence of Quality Control in the Production
7	Quality Tools and Statistical Process Control
8	Mid-Term Examination
9	Quality Tools and Statistical Process Control
10	Quality Tools and Statistical Process Control
11	Quality Tools and Statistical Process Control
12	Quality Assurance and Standards
13	Metrology: Linear, Angular and Form Measurement
14	Developments in Metrology (laser interferometers, CMMs, etc.)
15,16	Final Exam

NO	PROGRAM OUTCOMES	3	2	1
1	Sufficient knowledge of engineering subjects related with mathematics, science and own branch; an ability to apply theoretical and practical knowledge on solving and modeling of engineering problems.	[]	[x]	[]
2	Ability to determine, define, formulate and solve complex engineering problems; for that purpose an ability to select and use convenient analytical and experimental methods.	[]	[x]	[]
3	Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economical and political problems; for that purpose an ability to apply modern design methods.	[]	[]	[x]
4	Ability to develop, select and use modern methods and tools required for engineering applications; ability to effective use of information technologies.	[]	[x]	[]
5	In order to investigate engineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results.	[x]	[]	[]
6	Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence.	[]	[x]	[]
7	Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language.	[]	[x]	[]
8	Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement.	[]	[]	[x]
9	Understanding of professional and ethical issues and taking responsibility	[]	[x]	[]
10	Awareness of project, risk and change management; awareness of entrepreneurship, innovativeness and sustainable development.	[]	[]	[x]
11	Knowledge of actual problems and effects of engineering applications on health, environment and security in global and social scale; an awareness of juridical results of engineering solutions.	[]	[]	[x]

1:None. 2:Partially contribution. 3: Completely contribution.

Prepared by: Assist. Prof. Evren Yasa

Signature(s):

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