

TOROS ÜNİVERSİTESİ

Faculty Of Engineering
Industrial Engineering (English)

Course Information

QUALITY ENGINEERING					
Code	Semester	Theoretical	Practice	National Credit	ECTS Credit
		Hour / Week			
INE431	Fall	3	0	3	4

Prerequisites and co-requisites	none
Language of instruction	English
Type	Required
Level of Course	Bachelor's
Lecturer	Asst. Prof. Melik KOYUNCU
Mode of Delivery	Face to Face
Suggested Subject	none
Professional practise (internship)	None
Objectives of the Course	The main objective of this course is to study statistical methods and tools for quality control, quality engineering and process improvement.
Contents of the Course	Definition of quality and quality improvement, historical developments, basic statistical quality improvement methods, managerial aspects, description of variability, control charts for variables, control charts for attributes, non-conforming ratio charts, control charts for defect counts, selection criteria between the charts, process capability ratios, measurement capability, acceptance sampling, single, double and continuous sampling plans, Dodge-Romig plans.

Learning Outcomes of Course

#	Learning Outcomes
1	Student will gain the ability of development knowledge , purpose and basic functions of quality concept.
2	Student will gain to importance of quality management for organizations
3	Student will gain to the ability of analyzing, explaining and solving the problems related to quality.
4	Student will gain to an ability to apply all activities that should be performed by a quality manager.

Course Syllabus

#	Subjects	Teaching Methods and Technics
1	Quality improvement methods	Lecturing
2	Modeling process quality -review of basic statistical topics	Lecturing
3	Modeling process quality -random distributions	Lecturing
4	Statistical inference for assessing process quality	Lecturing
5	Statistical inference for assessing process quality	Lecturing
6	Basics of Statistical Process Control(SPC)	Lecturing
7	Midterm	Exam
8	Control charts for variables - foundations	Lecturing
9	Control charts for variables - X, R and s charts	Lecturing
10	Control charts for attributes	Lecturing

11	Control charts for attributes - np, p, c and u charts	Lecturing
12	CUSUM control charts	Lecturing
13	EWMA and Moving average control charts	Lecturing
14	Acceptance sampling plans and analysis of variance	Lecturing
15	Design of experiments	Lecturing
16	Final Exam	Exam

Course Syllabus

#	Material / Resources	Information About Resources	Reference / Recommended Resources
1	MONTGOMERY, D. C., 2008, Introduction To Statistical Quality Control (6th edition), John Wiley& Sons, Inc.		

Method of Assessment

#	Weight	Work Type	Work Title
1	40%	Mid-Term Exam	Mid-Term Exam
2	60%	Final Exam	Final Exam

Relationship between Learning Outcomes of Course and Program Outcomes

#	Learning Outcomes	Program Outcomes	Method of Assessment
1	Student will gain the ability of development knowledge , purpose and basic functions of quality concept.	2	1,2
2	Student will gain to importance of quality management for organizations	8	1,2
3	Student will gain to the ability of analyzing, explaining and solving the problems related to quality.	1,2	1,2
4	Student will gain to an ability to apply all activities that should be performed by a quality manager.	4	1,2

PS. The numbers, which are shown in the column Method of Assessment, presents the methods shown in the previous table, titled as Method of Assessment.

Work Load Details

#	Type of Work	Quantity	Time (Hour)	Work Load
1	Course Duration	14	3	42
2	Course Duration Except Class (Preliminary Study, Enhancement)	14	3	42
3	Presentation and Seminar Preparation	0	0	0
4	Web Research, Library and Archival Work	0	0	0
5	Document/Information Listing	0	0	0
6	Workshop	0	0	0
7	Preparation for Midterm Exam	1	2	2
8	Midterm Exam	1	5	5
9	Quiz	0	0	0
10	Homework	6	4	24
11	Midterm Project	0	0	0
12	Midterm Exercise	0	0	0
13	Final Project	0	0	0
14	Final Exercise	0	0	0

15	Preparation for Final Exam	1	2	2
16	Final Exam	1	3	3
				120