GAU, Faculty of Engineering

Course Unit Title	**Quality Planning and Control**
Course Unit Code	IE 407
Type of Course Unit	Compulsory
Level of Course Unit	4th Year BSc
National Credits	3
Number of ECTS Credits Allocated	7
Theoretical (hour/week)	3
Practice (hour/week)	-
Laboratory (hour/week)	-
Year of Study	4
Semester when the course unit is delivered	7
Mode of Delivery	Face to Face, Class discussions
Language of Instruction	English
Prerequisities and co-requisities	IE311
Recommended Optional Programme Components	-

Objectives of the Course:

- Overview of basic concepts and functions of quality
- Implementation of quality control techniques
- Concepts and statistical methods employed in the assurance of product conformance to specifications in the industrial environment
- Developing a quality control and planning culture

Learning Outcomes

When this course has been completed the student should be able to		Assesment.
1	Explain the importance of quality concept in a company	1,2,3
2	Prepare and evaluate control charts	1,2,3
3	Monitor process variability	1,2,3
4	Calculate Type I and TypeII error and make inferences	1,2
5	Explain theimportance of quality assurance	1,2,3

Assesment Methods: 1. Written Exam, 2. Assignment 3. Project/Report, 4.Presentation, 5 Lab. Work

Course's Contribution to Program

		CL
1	Ability to understand and apply knowledge of mathematics, science, and engineering	4
2	Ability to design and conduct experiments as well as to analyze and interpret data	3
3	Ability to work in multidisciplinary teams while exhibiting professional responsibility and ethical conduct	5
4	Ability to apply systems thinking in problem solving and system design	3
5	Knowledge of contemporary issues while continuing to engage in lifelong learning	4
6	Ability to use the techniques, skills and modern engineering tools necessary for engineering practice	5
7	Ability to express their ideas and findings, in written and oral form	5
8	Ability to design and integrate systems, components or processes to meet desired needs within realistic constraints	3
9	Ability to approach engineering problems and effects of their possible solutions within a well structured, ethically responsible and professional manner	4
10	Ability to design systems, processes or products by applying modern methods of work study, ergonomics, production systems and simulation while fulfilling requirements under realistic conditions	4
11	Ability to plan and improve system performance using production planning, quality planning and control, information system design and project planning techniques	5

CL: Contribution Level (1: Very Low, 2: Low, 3: Moderate 4: High, 5:Very High)

Course Contents

Week			Exams
1	Chapter 1	Introduction to Quality Control and Total Quality System	
2	Chapter 5	Graphical Methods of Data Presentation and Quality Improvement	
3		Graphical Methods of Data Presentation and Quality Improvement	
4	Chapter 6	Statistical Process Control (Control Charts for Variables)	
5		Statistical Process Control	
6	Chapter 7	Statistical Process Control	
7		Statistical Process Control	
8			Midterm
9	Chapter 8	Statistical Process Control(Control Charts for Attributes)	
10		Statistical Process Control	
11		Statistical Process Control	
12		Statistical Process Control	Quiz
13		Statistical Process Control	
14		Term Paper Presentations	
15			Final

Recommended Sources

Textbook: 1.A. Mitra, Fundamentals of Quality Control and Improvement, Prentice-Hall, 2nd Edn.(2005), ISBN 0- 13-645086-5

2. Duncan, A. J., Quality Control and Industrial Statistics, Richard D. Irwin, 5th ed. (1986)

3. Montgomery, D. C., Introduction to Statistical Quality Control, John Wiley, 3rd ed. (1996)

Assessment

Attendance	5%	
Assignments	5%	
Midterm Exam (Written)	25%	
Quiz (Written)	10%	
Project Report &Presentation	15%	
Final Exam (Written)	40%	
Total	100%	

ECTS Allocated Based on the Student Workload

Activities	Number	Duration (hour)	Total Workload(hour)
Course duration in class (including the Exam week)	15	3	45
Labs and Tutorials	-	-	-
Assignments	2	10	20
Project/Presentation/Report Writing	1	30	30
E-learning Activities	-	-	-
Quizzes	1	20	20
Midterm Examination	1	30	30
Final Examination	1	35	35
Self Study	14	3	42
Total Workload			212
Total Workload/30 (h)			7.07
ECTS Credit of the Course			7