

Course E-Syllabus

1	Course title	Industrial Quality Control
2	Course number	0906358/0906352
3	Credit hours	3
	Contact hours (theory, practical)	Theory 3 hours per week
4	Prerequisites/co-requisites	Statistics (1)
5	Program title	B.Sc. Industrial Engineering
6	Program code	
7	Awarding institution	The University of Jordan
8	School	Engineering
9	Department	Industrial Engineering
10	Level of course	mandatory course 3 th year
11	Year of study and semester (s)	Fall (1st semester) 2020/2021
12	Final Qualification	
13	Other department (s) involved in teaching the course	-
14	Language of Instruction	English/Arabic
15	Teaching methodology	<input type="checkbox"/> Blended <input checked="" type="checkbox"/> Online
16	Electronic platform(s)	<input checked="" type="checkbox"/> Moodle <input type="checkbox"/> Microsoft Teams <input type="checkbox"/> Skype Zoom <input checked="" type="checkbox"/> Others Microsoft teams
17	Date of production/revision	24/6/2020

18 Course Coordinator:

Name: Abbas Al-Refaie
Office number: 22942
Phone number: 0796622895
Email: abbas.alrefai@ju.edu.jo

19 Other instructors:

Name:
Office number:
Phone number:
Email:

Name:
Office number:
Phone number:
Email:

20 Course Description:

Concepts and statistical methods employed in the assurance of product conformance to specifications. Control charts for attributes and variables. Process capability analysis. Acceptance sampling plans and military standards

21 Course aims and outcomes:

1. Aims

This course aims to equip industrial engineering student with the necessary concepts, theory and skills required to understand and then apply statistical quality control concepts and tools when implementing/improving quality of products in industrial as well as service applications. Precisely, the course aims are:

- To develop understanding of concepts and statistical techniques in quality control.
- To enhance student skills for implementing statistical process control in practice and of the professional practice of its tools.
- To develop an understanding of process performance and its estimated capability.
- To encourage quality control tools to all real life applications.
- To increase students' confidence in their quality engineering practice and their confidence to work as teams.

2. Intended outcomes

Course Learning Outcome #	After successful completion of this course, the student will be able to	SO
CLO1	Identify and analyze quality costs in practical applications	4
CLO2	Analyze probability distributions for quality responses in practical applications	1
CLO3	Apply the magnificent seven tools in industrial and service industries	5
CLO4	Establish and analyze the variables and attributes control charts in real applications	6
CLO5	Conduct sampling data, analyze, interpret and then draw conclusions regarding measured quality responses and process capabilities	6
CLO6	The student should be able to work within teams and be prospective managers by a course project, which is accomplished by teams	5

22. Topic Outline and Schedule:

Week	Lecture	Topic	Teaching Methods*/platform	Evaluation Methods**	References
1-2	1-6	Chap 1: Introduction to quality Management	Microsoft teams	Quiz (1)	
3-5	1-9	Chap: 3 Statistical methods useful in quality control and improvement	Microsoft teams	Quiz (2)	
6-7	1-6	Chap. 5: How SPC works	Microsoft teams	Midterm	
8-11	1-12	Chap 6: Variable control charts	Microsoft teams	Mid/Final exam	
12-14	1-9	Chap 7: Attributes control charts	Microsoft teams	Final exam	
15	1-3	Chap 8: Process and measurement system capability	Microsoft teams	Final exam	
16	Review and Final Exams		School of Engineering		

- Teaching methods include: Synchronous lecturing/meeting; Asynchronous lecturing/meeting
- Evaluation methods include: Homework, Quiz, Exam, pre-lab quiz...etc

23 Evaluation Methods:

Opportunities to demonstrate achievement of the ILOs are provided through the following assessment methods and requirements:

Evaluation Activity	Mark	Topic(s)	Period (Week)	Platform
Quiz	10-15%	Chap 1: Introduction to quality Management Chap: 3 Statistical methods for quality improvement	4	Moodle
Midterm	30%	Chap. 5: How SPC works Chap 6: Variable control charts	8-10	Moodle
Participation and Assignments	5-10 %		Ongoing	Moodle
Final	50%	Chap. 5: How SPC works Chap 6: Variable control charts Chap 7: Attributes	16	Moodle

		control charts		
		Chapter 8: Process capability and acceptance sampling		

24 Course Requirements (e.g: students should have a computer, internet connection, webcam, account on a specific software/platform...etc):

Student should have the text book, a computer and internet connection.

25 Course Policies:

A- Attendance policies: all students are expected to attend all one line meetings. Any student with more than 15% missing classes is subject to be failed in the class.

B- Absences from exams and submitting assignments on time: all students should submit the assigned quizzes, short late submission is permissible if the student had internet issues during the exam. Final exam is expected to be on campus and all absent student are subject to the university regulation for accepting their absence excuse through the office of the assistant dean for student affairs

C- Health and safety procedures: During the exams in the University, students shall abide to health safety regulations by wearing masks/Gloves, wash hands, and distancing.

a. D- Honesty policy regarding cheating, plagiarism, misbehavior: Discuss the assignments among yourselves. This is helpful to the learning process. However, direct copying of others work will NOT be allowed or tolerated and will result in a reduction of grade.

E- Grading policy:

Quizzes and participation	:10-20%
Midterm	:30%
Final	:50%
Total	:100%

F- Available university services that support achievement in the course: School of engineering computer labs/Exam halls

26 References:

<p>A- Required book(s), assigned reading and audio-visuals:</p> <p>D. C. Montgomery (2015). <i>Statistical Quality Control: A modern Introduction</i>. Wiley. 7th Edition</p> <p>B- Recommended books, materials and media:</p> <p>D. C. Montgomery et al. (2011). <i>Applied statistics and probability for engineering</i>, Wiley. 15th Edition YouTube, shared power point files</p>
--

27 Additional information:

<p>The B.Sc. in industrial Engineering program enables students to achieve, by the time of graduation the following program learning outcome (SOs)</p>			
1	an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics	6	an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
2	an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors	7	an ability to acquire and apply new knowledge as needed, using appropriate learning strategies
3	an ability to communicate effectively with a range of audiences		
4	an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts		
5	an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives		

Name of Course Coordinator: Abbas Al-Refaie -Signature: *Abbas Al-Refaie* Date: 5/10/2020

Head of Curriculum Committee/Department: Signature: -----

Head of Department: Signature: -----

Head of Curriculum Committee/Faculty: -----Signature: -----

Dean: ----- Signature: -----