1	**Course title**	Advanced Food Quality Control
2	**Course number**	0603935
3	**Credit hours**	3
	Contact hours (theory, practical)	3
4	**Prerequisites/corequisites**	-
5	**Program title**	PhD. in Food Science and Technology
6	**Program code**	032
7	**Awarding institution**	The University of Jordan
8	**School**	Agriculture
9	**Department**	Nutrition and Food Technology
10	**Level of course**	Graduate Course
11	**Year of study and semester (s)**	Fall and Spring Semesters
12	**Final Qualification**	PhD. in Food Science and Technology
13	**Other department (s) involved in teaching the course**	None
14	**Language of Instruction**	English
15	**Date of production/revision**	16-9-2020

16 Course Coordinator:

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17 Other instructors:

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QF-AQAC-03.02.1.2

18 Course Descriptions:

The course covers such topics as food quality control management including quality policy and objectives, quality attributes, process approach etc. The course also covers the principles and practices of total quality management as well as its tools and techniques. Quality systems and their audit process, sampling, and charting; statistical tools in quality activities such as probability, data distribution, ANOVA, sampling, and charting, as well as process capability and process control to be also covered.

19 Course aims and outcomes:

A- Aims:
The aim of this course is to provide students with advanced techniques for effective food quality control applications. Students will be introduced and have practical problem and solving applications of applying different statistical tools in the quality control issues. Establishing, implementing and maintaining of different management systems in the food industry are other objectives.

B- Intended Learning Outcomes (ILOs): Upon successful completion of this course students will be able to
A. Knowledge and Understanding: Student is expected to
A1. Understand the quality terms, its important and applications as well as the elements of total quality management
A2**.** Understand the statistical tools used in quality activities
A3. Understand the concept of total quality management and their applications in the food industry.

B. Intellectual Analytical and Cognitive Skills: Student is expected to
B1**-** Describe the concept and activities of quality in food establishments,
B2- Establishing an example quality department including its documented activities.
B3- Develop a detailed understanding regarding the statistical tool used in quality activities

C. Subject- Specific Skills: Students is expected to
C1- Apply and analyze statistical methods used in quality control
C2- Applicable for solving problems associated with inferior quality and nonconforming food products

D. Transferable Key Skills: Students is expected to
D1- Gain basic knowledge related to statistical quality control
D2- Applying quality control techniques

20. Topic Outline and Schedule:

Week	Subject	Sources	ILOs
1, 2	Quality Improvement In The Modern Business Environment	**1.** Montgomery, D. C., (2009). Introduction to Statistical Quality Control. Sixth Edition. John Wiley & Sons, Inc.	**A1**
2	The DMAIC Process		**A2, A3**
2, 3	Statistical Methods Useful In Quality Control and Improvement		**A2**
3	Modeling Process Quality		**B3**
4, 5	Inferences About Process Quality - Basic Methods of Statistical Process Control and Capability Analysis	**2.** Mitra, A. (2016). Fundamentals of Quality Control and Improvement. Fourth Edition. John Wiley & Sons, Inc. Hoboken, New Jersey.	**A**
5	Methods and Philosophy of Statistical Process Control		**B, C**
6	Control Charts For Variables Control Charts For Attributes		**C**
7	Process and Measurement System Capability Analysis		**C, D1**
8, 9	Other Statistical Process monitoring and Control Techniques		**C1, C2**
9, 10	Cumulative Sum and Exponentially Weighted Moving Average Control Charts		**C, B**
10	Other Univariate Statistical Process Monitoring and Control Techniques		**A1**
11	Multivariate Process Monitoring and Control		**C**
12	Engineering Process Control and Spc		**B2, B3**
13, 14	Factorial and Fractional Factorial Experiments For Process Design and Improvement		**A2, C2**
14. 15	Process Optimization With Designed Experiments		**D2**
15	Acceptance Sampling - Lot-By-Lot Acceptance Sampling For Attributes - Other Acceptance-Sampling Techniques		**C1, C2**
16	Tasting Panels: Sensory Assessment In Quality Control		**D1, D2**

21. Teaching Methods and Assignments:

The course will be structured in lectures and discussions. The course comprises overviews, from general understanding to expert knowledge on key topics, and learning based on lectures as well as independent learning. A presentation project is also included in the evaluation process.

22 Evaluation Methods and Course Requirements::

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

Class work will be presented and presentations of selected food quality topics. Exams, assignments and presentation evaluation will be graded for evaluation. Exams will be administered after completion of the course technical units; these unit exams will comprise both essay and problem oriented questions. The final exam is comprehensive.

23 Course Policies:

Students and instructors each have an important role in maintaining a classroom environment optimal for learning, and are expected to treat each other with respect during class, using thoughtful dialogue, and keeping disruptive behaviors to a minimum. Class discussions are interactive and diverse opinions will be shared; please be thoughtful in sharing your perspectives and responses with one another. Other behaviors that can be disruptive are chatting and whispering during class, the use of electronic equipment, preparing to leave before class is over, and consistently arriving late to class. Please keep these disruptions to a minimum. Inappropriate behavior in the classroom may result in a request to leave the class and/or subject to penalty.

24 Required equipment: (Facilities, Tools, Labs, Training….)

Classroom facilities

25 References:

Main Reference/s:
1. Montgomery, D. C., (2009). Introduction to Statistical Quality Control. Sixth Edition. John Wiley & Sons, Inc.

2. Mitra, A. (2016). Fundamentals of Quality Control and Improvement. Fourth Edition. John Wiley & Sons, Inc. Hoboken, New Jersey.

Additional Reference/s:
1. Hubbard, M. R. (2003). Statistical Quality Control for the Food Industry. Third Edition. Kluwer Academic/Plenum Publishers, New York 233 Spring Street, New York, New York 10013

2. Clute, M. (2009). Food Industry Quality Control Systems. CRC Press Taylor & Francis Group 6000 Broken Sound Parkway NW, Suite 300 Boca Raton, FL 33487-2742

3. Peña-Rodríguez, M. E.(2013). Statistical Process Control for the FDA-Regulated Industry. American Society for Quality, Quality Press, Milwaukee 53203

26 Additional information:

Name of Course Coordinator: Prof. Mohammed Saleh   Signature: ------------------ Date: ------------

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

Head of Department: --- Signature: ----------------------

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

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