The University of Jordan **School of Engineering** **Industrial Engineering Department**		الجامعة الاردنية كلية الهندسة والتكنلوجيا قسم الهندسة الصناعية	

SPRING 2024/2025

Course name:	Engineering Statistics I
Course code:	0936251
Credits hours	3
Contact hours	Section 1: Sunday, Tuesday, Thursday 9:30-10:20, IE402
Office hours:	Sunday, Tuesday, Thursday: 11:30-12:30 Monday, Wednesday: 8:30 −9:30 and by appointment
Course instructor's name, E-mail, and phone:	Prof. Mazen Arafah, Ph.D., CMQ/OE, CSSBB, BSCM, EFQM Excellence Assessor Mazen.arafeh@ju.edu.jo **962 6 -535 5000. Ext. 22940 (IE Dept)**
Course Coordinator:	Prof. Mazen Arafah, CMQ/OE, CSSBB, BSCM, EFQM /KACE Excellence Assessor
Textbook:	Applied Statistics and Probability for Engineers, by D. Montgomery and G. Runger, 7th edition, Wiley.
Other references:	Will be given if needed
Course Description:	Quantitative and graphical descriptive statistics, probability concepts, discrete and continuous random variables and distributions, joint probability distributions, covariance and correlation of random variables, point, and interval estimation, sampling distributions, hypothesis testing, introduction to simple linear regression. Practical exercises on the application of statistical methods in engineering
Providing Department:	Industrial Engineering
Prerequisite Course:	Calculus II (0301102)
Course type	Mandatory

Assessment Methods: (Tentative)	**Method**	**Weight %**	**Date**
	Midterm Exam	30 %	TBA
	Quizzes, Homework, Participation, and Mini-project (any or all)	20 %	TBA
	Final Exam	50 %	TBA

	#	**After successful completion of this course, the student will be able to**	**SO**	**Target**
Course Learning Outcomes:	**CLO1**	Compute and interpret sample parameters like (mean, variance, standard deviation, median, range ... etc.).	**1**	
	CLO2	Produce and interpret graphical displays for simple data sets (histogram, box plot, ….).	**1**	
	CLO3	Explain the important role of the normal distribution as a sampling distribution.	**1, 6**	
	CLO4	Learn how to find a point estimator and interval estimator for a certain parameter	**1**	
	CLO5	Apply the techniques the student learned in the course using statistical software.	**6**	

	# of Week	Topic
A brief list of topics	1	Ch1: Introduction
	2-3	Ch2: Probability concepts and Counting Techniques
	4-6	Ch3: Discrete Random Variables and Probability Distributions
	7-8	Ch4: Continuous Random Variables and Probability Distributions
	9	Ch5: Joint probability distributions, covariance, and correlation of random variables
	10	Ch6: Data Description
	11	Ch7: Sampling distribution and Point Estimation of Parameters
	11-13	Ch8: Statistical interval for a single sample
	14-15	Ch9: Test of hypothesis for a single sample
Important Notes:	- Class notes, in-class drills, and any handout you receive from the instructor are required as part of the course. - Do not hesitate to ask questions - The student is required to bring a notebook and take notes in classes. - Students are expected to attend every class session, and they are responsible for all material, announcements, schedule changes, etc., discussed in class. - Discuss the assignments (the ungraded assignments) with your classmates. - If the assignment is declared graded, students MUST work on it individually. NO late assignment will be accepted. - Do not Cheat; direct copying of others' work will NOT be allowed or tolerated and will result in a grade reduction. If a student is found cheating in an exam or assignment, even signing the roll sheet for another student, he/she will be given an "F" for the course. There will be no exceptions. - All cases of academic dishonesty will be handled per university policies and regulations. JU policy requires the faculty member to assign a ZERO grade (F) if a student misses **15%** of the classes that are not excused and 20% of the classes that are excused - Students are expected to be ready to take a quiz any time they have a class. There will be no make-up quizzes or homework. - Any student with disabilities who needs accommodations in this course is encouraged to speak with the instructor as soon as possible to make appropriate arrangements for these accommodations.	

The B.Sc. in Industrial Engineering program enables students to achieve, by the time of graduation, the following program learning outcome (SOs)			
1	An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics	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
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	6	An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
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	7	An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.