Course Title and code:	Applied Statistics **IE 0906702**
Learning/Teaching Methods:	Lectures/Problem solving sessions.
	Case studies.
	Homeworks
	Reading assignments.
Assessment Methods:	Home works, and Short Exams
	First and Second Exams
	Final exam
Providing Department:	Industrial Engineering
Instructor:	Dr. Abbas Al-Refaie
Phone:	22942
Email:	abbas.alrefai@ju.edu.jo
Class time:	Section 1: Tuesday. : 3:30-6:30
Class Place:	IE. 101
Office Hours:	Tuesday : 3:30-06:30

Course Description:

3 Credit hours (3. hours lecture each week). Advanced topics on probability theory, theory of statistical inference, estimation, sampling distribution, tests of hypothesis, linear and nonlinear regression. Analysis of variance, design and analysis of experiments, and case studies.

Course Prerequisite: --

Course Objectives/ Student Learning Outcomes:
1. Explain in simple terms, the concepts of basic statistics experimental design. (SLO7, SLO10)
2. Understand and use the probability theory and regression methods. (SLO5, SLO8, IE1)
3. Demonstrate the ability to use the linear and nonlinear regression models. (SLO1, SLO2)
4. Demonstrate the ability to design, use, and interpret experimental results. (SLO1, SLO2, SLO3, IE1)
5. Demonstrate the ability to design, use, and interpret experimental results with blocking. (SLO1, SLO2, SLO3, IE1)
6. Perform analysis of variance. (SLO1, SLO2, SLO3, IE1)
7. Demonstrate the ability to design, use, and interpret experimental results with Two-level Factorial Designs. (SLO1, SLO2, SLO3, IE1)
8. Demonstrate the ability to use software in cases and applications. (SLO11)

9. Demonstrate Ability to conduct a comprehensive design and analysis in real life applications (SLO4, SLO7, SLO8, IE1).

Text Books and References:

1. D. Montgomery (2009). *Design and Analysis of Experiments*. 7th Edition, John Wiley & Sons.
2. D. Montgomery and G. Runger* (2007). *Applied Statistics and Probability for Engineers*. 6th Edition, John Wiley & Sons.
3. Instructor's notes

Grading:

		Percentage
1	Class quizzes, field project, assignments.	10%
2	First exam	25%
	Second Exam	25 %
3	Final Examination, Comprehensive	40%
	Total	100%

Tentative course outline:

Chapter	Topics
Chapter 1	Basic Statistical Methods
Chapter 1	Simple Linear Regression and Correlation
Chapter 3	Multiple Linear Regression.
Chapter 5	Analysis of Variance
Chapter 6	Experiments with Blocking
Chapter 7	Factorial Experiments
Chapter 8	Two-level Factorial Designs
Chapter 9	Blocking and Confounding Systems for Two-level factorials
Chapter 10	Two-level Fractional Designs

Important Notes:
a. All course material, handouts, assignments will be posted on UJ-learning website.
b. Students are responsible for continuously referring to the sight for updated material.
c. Do not hesitate to ask questions on any material you do not fully understand
d. Students are required to bring a notebook and take notes in all classes.
e. Students are expected to attend every class session and they are responsible for all material, announcements, schedule changes, etc., discussed in class.
f. Discuss the assignments among yourselves. This is helpful to the learning process.
g. Don't Cheat; direct copying of others work will NOT be allowed or tolerated and will result in a reduction of grade. If you are found to be cheating in any way, on an exam or assignment, even signing the roll sheet for another student, you will be given an "F" for the course. There will be no exceptions.
h. All cases of academic dishonesty will be handled in accordance with university policies and regulations. JU policy requires the faculty member to assign ZERO grade (F) if a student misses 15% of the classes that are not excused, and 20% of the classes that are excused

i. There will be a number of home works and unannounced quizzes during the semester. Students are expected to be ready to take a quiz any time they have a class. There will be no make-up quizzes or home works.
j. Any students with disabilities who need accommodations in this course are encouraged to speak with the instructor as soon as possible to make appropriate arrangements for these accommodations.