



**Jordan University of Science and Technology**  
**Faculty of Science & Arts**  
**Mathematics Department**

MATH331 Statistical Methods(1)

First Semester 2017-2018

**Course Catalog**

3 Credit Hours. Simple linear regression: estimation and inference, prediction, residual analysis, multiple regression, estimation and statistical inference, criteria for choosing best model. The concept and applications of experimental design, randomized designs.

**Text Book**

<b>Title</b>	Applied Linear Statistical Models
<b>Author(s)</b>	Michael H. Kutner
<b>Edition</b>	5th Edition
<b>Short Name</b>	TextBook
<b>Other Information</b>	

**Course References**

Short name	Book name	Author(s)	Edition	Other Information
Ref 1	Design and Analysis of Experiment	Douglas C. Montgomery	6th Edition	John Wiley

**Instructor**

Name	<b>Dr. HANAN HAMMOURI</b>
Office Location	Ph4 level 0
Office Hours	Sun : 13:30 - 14:30 Mon : 11:30 - 13:00 Wed : 13:00 - 14:00 Thu : 10:00 - 12:30
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**Class Schedule & Room**

Section 1:

Lecture Time: Mon, Wed : 10:00 - 11:30

Room: M1303

**Prerequisites**

Line Number	Course Name	Prerequisite Type
903300	MATH330 Mathematical Statistics	Prerequisite / Study

**Tentative List of Topics Covered**

Weeks	Topic	References
Week 1	The simple linear regression model: model description.	
Week 2	Estimation and testing.	
Week 3	Model diagnostics.	
Week 4	The multiple linear regression model: model description and estimation.	
Week 5	Hypothesis testing.	
Week 6	Model selection.	
Week 7	Multicollinearity and model diagnostics.	
Week 8	Experimental Design: basic principles	
Week 9	Simple comparative experiments, two independent samples and paired t-tests.	
Week 10	Experiments with a single factor: 1-WAY ANOVA, fixed effects model	
Week 11	Multiple comparisons.	
Week 12	Single factor, random effect model.	
Week 13	2-WAY ANOVA.	
Week 14	Completely randomized block design Incomplete randomized block design.	
Week 15	Review	

**Mapping of Course Objectives to Program Student Outcomes<sup>1</sup>**

**Assessment method**

Understanding and fitting simple linear regression model and multiple regression model and perform model selection and model diagnostics. [1a, 2b, 1c]	
Understanding and Fitting 1-WAY ANOVA, fixed effect model and random effect model. And interpreting the results. [1a, 2b, 2c]	
Fitting and analyzing 2-WAY ANOVA, fixed effect model. And interpreting the results. [1a, 2b, 2c]	
Analyze a data using randomized complete and incomplete block designs. [1a, 2b, 1c]	

Relationship to Program Student Outcomes (Out of 100%)										
a	b	c	d	e	f	g	h	i	j	k
22.75	45.50	31.75								

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