



<b>The Hashemite University</b>	 	<b>Statistical Methods (2001011332) 3 Credit Hours</b>
<b>Faculty of Science</b>		<b>Pre-requisite: Introduction to Probability and Statistics</b>
<b>Department of Mathematics</b>		<b>First Semester 2023/2024</b>
<b>Course Syllabus</b>		

<b>Course Information</b>	
<b>Lecture's Time</b>	Section 1: 10:00 – 11:00
<b>Lecture's Room</b>	م.ش 104
<b>Instructor</b>	Dr. Mohammad Almomani
<b>Office Location</b>	ر 320
<b>Office Hours</b>	12:00 – 1:00 Sunday, Tuesday and Thursday
<b>Text Book</b>	Introductory Statistics. Neil A. Weiss, Addison-Wesley, 2012, 9 <sup>th</sup> Edition.
<b>References</b>	<ol style="list-style-type: none"> <li>1. Introduction to Probability and Statistics, by W. Mendenhall, R. Beaver &amp; B. Beaver.</li> <li>2. Statistics: Principles and Methods, by Johnson and Bhattacharyya.</li> <li>3. Statistics: A First Course, by Donald H. Sanders.</li> <li>4. Principles of Statistics, by Bulmar.</li> </ol>

<b>Grading Policy</b>	
<b>First Exam</b>	30 %
<b>Second Exam</b>	30 %
<b>Final Exam</b>	40 %

<b>Description and Objectives of the Course</b>
<p>The goal of this course is to introduce students to basic ideas of analysis of data in the following subjects: simple linear regression and correlation coefficient, multiple correlation, Chi-square test for consistency, independence and homogeneity. It also handles one and two dimensional analysis of variance with and without reactions, the one and two dimensional factor correction, and non-parametric statistics: Wilcoxon test, sign test, Spermann correlation coefficient. The main objectives are:</p> <ul style="list-style-type: none"> <li>❖ To acquaint students with some basic statistical tools needed to develop some statistical theorems and applications.</li> <li>❖ To familiarize students with methods of statistical inference under various probability models and how to apply them.</li> <li>❖ To familiarize students with statistical packages such as MINITAB.</li> </ul>

Week	Section	Topics
<b>CHAPTER 13: Chi-Square Procedures</b>		
1	13.1	The Chi-Square Distribution
2	13.2	Chi-Square Goodness-of-Fit Test
	13.3	Contingency Tables; Association
3	13.4	Chi-Square Independence Test
4	13.5	Chi-Square Homogeneity Test
<b>CHAPTER 14: Descriptive Methods in Regression and Correlation</b>		
5	14.1	Linear Equations with One Independent Variable
6	14.2	The Regression Equation
7	14.3	The Coefficient of Determination
8	14.4	Linear Correlation
<b>CHAPTER 15: Inferential Methods in Regression and Correlation</b>		
9	15.1	The Regression Model; Analysis of Residuals
10	15.2	Inferences for the Slope of the Population Regression Line
11	15.3	Estimation and Prediction
12	15.4	Inferences in Correlation
	**	Multiple Linear Regression
<b>CHAPTER 16: Analysis of Variance (ANOVA)</b>		
13	16.1	The <i>F</i> -Distribution
	16.2	One-Way ANOVA: The Logic
14	16.3	One-Way ANOVA: The Procedure
	16.4	Multiple Comparisons
15	16.5	The Kruskal–Wallis Test and Wilcoxon test
	**	Two-Way ANOVA (RBD)

**Participation and Exams:-**

Attendance is absolutely mandatory. Students who miss 6 class sessions without a compelling excuse will qualify the student to be dismissed. ***“Makeup for first, second and final exams are allowed only in circumstance of serious illness or other extreme situations. Documents are required, the instructor is expected to be notified as soon as possible for makeup”.***