



**Jordan University of Science and Technology**  
**Faculty of Veterinary Medicine**  
**Veterinary Medicine And Surgery Department**

VM711 Biostatistics

First Semester 2021-2022

**Course Catalog**

2 Credit Hours. By the end of this course, student should be able to: 1. Collect, classify, summarize and present data. 2. Make essential statistical analysis on the mean of one, two and more than two samples. 3. Make essential statistical analysis on the proportion (rate) of one and two samples. 4. Make essential statistical analysis on categorical data. 4. Draw scientific conclusion from sample(s).

**Text Book**

<b>Title</b>	Biostatistics: A foundation for Analysis in the Health Sciences.
<b>Author(s)</b>	By W. Daniel
<b>Edition</b>	10th Edition
<b>Short Name</b>	Biostatistics
<b>Other Information</b>	1999

**Course References**

Short name	Book name	Author(s)	Edition	Other Information
Biostatistics	Biostatistics for Health and Life Sciences	L.Sharif	1st Edition	2010

**Instructor**

Name	<b>Prof. Labib Al-Sharif</b>
Office Location	G1L2
Office Hours	
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**Class Schedule & Room**

Section 2:

Lecture Time: Mon : 11:00 - 13:00

Room: LAB

**Tentative List of Topics Covered**

<b>Weeks</b>	<b>Topic</b>	<b>References</b>
Week 1	1- Introduction: Definition of Biostatistics, Types of variables. Population and sample. Studying Sample versus Population	
Week 2	Descriptive Statistics Measures of Central Tendency: Arithmetic mean, Median, and Mode. Geometric mean and Weighted mean.	
Week 3	Measures of Variability: Range, Variance, Standard deviation and Coefficient of Variation.	
Week 4	Probability ? Definitions ? Addition Rules ? Multiplication Rules ? Dependent and independent variables	
Week 5	Sensitivity and specificity of a screening test ? Predictive positive rate ? False positive and false negative rates.	
Week 6	Distribution: ? Normal: Z- distribution and t- distribution. ? Binomial distribution	
Week 7	Estimation: A- Normal Distribution Confidence interval for a population mean	
Week 8	Confidence interval for the difference between two population means	
	Binomial Distribution: Confidence interval for a population proportion; Confidence interval for the difference between two Population proportions	
Week 10	Exercises and questions.	
	Hypothesis Testing: Null Hypothesis and alternative Hypothesis ? Rejection region and acceptance region ? Level of significance (P-value). ? Z and t-tests for: A- One population mean.	
Week 12	Hypothesis Testing: B-Two populations? means: ? Independent ? Dependent	
Week 13	Hypothesis Testing: Z-test for Binomial Distribution: One population proportion	
Week 14	Two populations proportions ; Review questions	
Week 15	Hypothesis Testing Chi square test. Contingency table 2x2 table Statistical decision	

<b>Mapping of Course Outcomes to Program Student Outcomes</b>	<b>Course Outcome Weight (Out of 100%)</b>	<b>Assessment method</b>
Introduction: Definition of Biostatistics, Types of variables. Population and sample. Studying Sample versus Population	5%	
Measures of Central Tendency: Arithmetic mean, Median, and Mode. Geometric mean and Weighted mean	5%	
Range, Variance, Standard deviation and Coefficient of Variation.	5%	
? Definitions ? Addition Rules ? Multiplication Rules ? Dependent and independent variables	10%	
Sensitivity and specificity of a screening test ? Predictive positive rate ? False positive and false negative rates.	15%	
? Normal: Z- distribution and t- distribution. ? Binomial distribution	10%	
A- Normal Distribution Confidence interval for a population mean	10%	
Confidence interval for the difference between two population means	10%	
? Confidence interval for a population proportion ? Confidence interval for the difference between two Population proportions	10%	
Null Hypothesis and alternative Hypothesis ? Rejection region and acceptance region ? Level of significance (P-value). ? Z and t-tests for: A- One population mean.	10%	
Hypothesis Testing: Z-test for Binomial Distribution: One population proportion; Two populations proportions	5%	
Contingency table 2x2 table Statistical decision	5%	

<b>Relationship to Program Student Outcomes (Out of 100%)</b>									
1	2	3	4	5	6	7	8	9	10

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