



Jordan University of Science and Technology
Faculty of Pharmacy
Pharmacy Department

PHAR900 Advanced Biostatistics - JNQF Level: 10

First Semester 2024-2025

Course Catalog

2 Credit Hours. The course covers descriptive and inferential statistics as they apply to biomedical and social sciences. The course will concentrate on probability and distributions, data types, hypothesis testing, types of error, sample size and power, parametric statistics (e.g., t-tests, ANOVA, regression), and non-parametric alternatives for examining and analyzing a wide range of problems as well as biomedical and clinical examples in order to draw statistical decisions. The course will also train students on using statistical spreadsheet and software programs to solve assigned homeworks.

Teaching Method: On Campus

Text Book

Title	Discovering Statistics Using SPSS
Author(s)	Andy Field
Edition	5th Edition
Short Name	Ref 1
Other Information	Wiley, 2018

Course References

Short name	Book name	Author(s)	Edition	Other Information
Ref 2	Biostatistics	Ronald N. Forthofer, Eun Sul Lee and Mike Hernandez	2nd Edition	Elsevier Inc. 2007
Ref 3	Understanding Pharmacoepidemiology	Yi Yang and Donna West-Strum	1st Edition	The McGraw-Hill Companies, Inc. 2011

Instructor

Name	Dr. SHOROQ ALTAWALBEH
Office Location	P2 L-0

Office Hours	Sun : 11:30 - 12:30 Tue : 10:30 - 12:30 Wed : 13:30 - 14:30 Thu : 10:30 - 12:00 Thu : 13:30 - 14:00
Email	smaltawalbeh@just.edu.jo

Class Schedule & Room
Section 1: Lecture Time: Sun, Tue : 08:30 - 09:30 Room: قاعة الكندي/صيدلة

Tentative List of Topics Covered		
Weeks	Topic	References
Week 1	Basics of Statistical Analysis and descriptive Statistics.	From Ref 2
Week 2	Statistical inference; estimation and hypothesis testing	From Ref 2
Week 3	Data management with SPSS demonstration	From Ref 1
Weeks 4, 5	Comparison of means; students t-tests and one way ANOVA.	From Ref 1 , From Ref 2
Week 6	Nonparametric tests	From Ref 1 , From Ref 2
Week 7	Statistical inference on categorical variables	From Ref 1 , From Ref 2
Week 8	Correlation	From Ref 1 , From Ref 2
Weeks 9, 10	Simple and multiple linear regression	From Ref 1 , From Ref 2
Week 11	Logistic regression	From Ref 1 , From Ref 2
Weeks 12, 13	Power and sample size calculations	From Ref 2
Week 14	Survival analysis and cox hazard regression	From Ref 1 , From Ref 2
Week 15	Meta-Analysis	

Mapping of Course Outcomes to Program Outcomes and NQF Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Explain different measures of descriptive statistics and data dispersion. [1PhD-PLO3] [1L10S1]	10%	Midterm Exam

Discuss basic principles of hypothesis testing and estimation methods. [1PhD-PLO3] [1L10S1]	10%	Midterm Exam
Outline the most commonly used statistical tests, highlighting their underlying assumptions and potential limitations. [1PhD-PLO3] [1L10S1, 1L10S2]	60%	Midterm Exam, Midterm Project, Final exam, Final Project
Apply the needed skills to analyze and present data using the statistical software (SPSS) [1PhD-PLO4] [1L10S1, 1L10S2]	20%	Midterm Project, Final Project

Relationship to Program Student Outcomes (Out of 100%)					
PhD-PLO1	PhD-PLO2	PhD-PLO3	PhD-PLO4	PhD-PLO5	PhD-PLO6
		80	20		

Relationship to NQF Outcomes (Out of 100%)	
L10S1	L10S2
60	40

Evaluation	
Assessment Tool	Weight
Midterm Exam	30%
Midterm Project	20%
Final exam	30%
Final Project	20%

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