



كلية الصيدلة جامعة الزيتونة الأردنية  
Faculty of Pharmacy  
Al-Zaytoonah University of Jordan  
" نحو تعليم صيدلاني متميز "

Toward Excellence in Pharmaceutical Education

جامعة الزيتونة الأردنية  
Al-Zaytoonah University of Jordan  
كلية الصيدلة  
Faculty of Pharmacy



" Tradition and Quality "

<b>Detailed Course Description - Course Plan Development and Updating Procedures/ Pharmacy Department</b>	<b>QF02/0408-3.0E</b>
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Faculty	Pharmacy	Department	Pharmacy
<b>Course number</b>	0201453	Course title	Pharmaceutical Biostatistics
Number of credit hours	3	Pre-requisite/co-requisite	Pharmacology 2

**Brief course description**

This course aims to provide an introduction to basic statistical concepts as they apply to the health sciences. Specific topics include tools for describing central tendency and dispersion of data, probability concepts, statistical hypothesis testing and its application to group comparisons, methods of sampling, and various statistical measures.

<b>Course goals and learning outcomes</b>	
<b>Goal 1</b>	<b>To teach students common procedures for describing data</b>
Learning outcomes	1.1 To understand how data can be appropriately organized and displayed. 1.2 To calculate and interpret measures of central tendency, such as the mean, median, and mode. 1.3 To calculate and interpret measures of dispersion, such as the range, variance, and standard deviation.
<b>Goal 2</b>	<b>To introduce students to basic concepts of probability</b>
Learning outcomes	2.1 To understand the properties of probability and probability rules. 2.2 To be able to calculate the probability of an event. 2.3 To use probability distributions to calculate probabilities in real-world problems.
<b>Goal 3</b>	<b>To provide students with the tools to perform statistical inference</b>
Learning outcomes	3.1 To calculate confidence intervals and learn how to interpret them. 3.2 To understand how to carry out a hypothesis test. 3.3 To learn how to calculate and interpret p values.
<b>Textbook</b>	Biostatistics: A Foundation for Analysis in the Health Sciences, 10 <sup>th</sup> Ed., Wayne W. Daniel and Chad L. Cross, 2013, Wiley & Sons, Inc.
<b>Supplementary references</b>	--



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Course timeline				
Week	Number of hours	Course topics	Pages (textbook)	Notes
01	1	) Introduction to Biostatistics	Ch. 1	
	1	) Basic statistical concepts		
	1	) Design of experiments		
02	1	) The frequency distribution	Ch. 2	
	1	) Measures of central tendency		
	1	) Skewness		
03	1	) Measures of dispersion	Ch. 2	
	1	) Variance vs. standard deviation		
	1	) Kurtosis		
04	1	) Basic Probability Concepts	Ch. 3	
	1	) Calculating probability of an event		
	1	) Sensitivity and specificity		
05	1	) Probability Distributions of discrete variables	Ch. 4	
	1	) The binomial distribution		
	1			
06	1	<b>First Exam</b>		
07	1	) The continuous probability distribution	Ch. 4	
	1	) The normal distribution		
	1	) Normal distribution applications		
08	1	) Sampling distributions	Ch. 5	
	1	) Distribution of the sample mean		
	1	) Distribution of the difference between two sample means		
09	1	) Confidence intervals for a population mean	Ch. 6	
	1	) The t-distribution		
	1	) Confidence interval for the difference between two population means		
10	1	<b>Second Exam</b>		
11	1	) Hypothesis testing steps	Ch. 7	
	1	) Stating null and alternative hypotheses		
	1	) Level of significance		
12	1	) Hypothesis testing for a single population mean	Ch. 7	
	1	) Hypothesis testing for the difference between two population means		
	1			
13	1	) Introduction to regression	Ch. 9	
	1	) Simple linear regression		
	1	) Regression analysis		



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<b>14</b>	<b>1</b>	) Introduction to correlation	Ch. 9	
	<b>1</b>	) Calculating the coefficient of determination		
	<b>1</b>	) Calculating correlations among variables		
<b>15</b>	<b>1</b>	<b>Final Exam</b>		

<b>Theoretical course evaluation methods and weight</b>	Homework/ classwork = 10% First exam = 20% Second exam = 20% Final exam = 50%	<b>Practical (clinical) course evaluation methods</b>	N/A
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<b>Approved by head of department</b>		<b>Date of approval</b>	
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Extra information (to be updated every semester by corresponding faculty member)

<b>Name of teacher</b>		<b>Office Number</b>	
<b>Phone number (extension)</b>		<b>Email</b>	
<b>Office hours</b>			