Philadelphia University	PHILADELPHIA	Approval date:
Faculty of Science	UNIVERSITY	Issue:
<b>Department of Mathematics</b>	THE WAY TO THE FUTURE	Credit hours: 3
Academic year 2023/2024	Course Svllabus	Bachelor

# **Course information**

Course #	Course title	Prerequisite		
0216121	Introduction to Statistics and	Introduction to Statistics and Probability		
	Class	s time Room #		
<ul> <li>□ University Requirement</li> <li>□ Major Requirement</li> <li>□ Elective</li> <li>□ Compulsory</li> </ul>			Mon - 9:30	

## **Instructor Information**

Name	Office No.	Phone No.	Office Hours	E-mail
Dr. Heba Ayyoub	21019	2466	Sat to Tues 10:00 - 11:00	hayyoub@philadelphia.edu.jo

## **Learning Method**

	Learning Method	
☑ Face to face	□ Online	□ Blended

## **Course Description**

# Course Description This course is an introductory course that assumes no prior knowledge of statistics but does assume some knowledge of high school algebra. Basic statistical concepts and methods are presented in a manner that emphasizes understanding the principles of data collection and analysis rather than theory. Much of the course will be devoted to discussions of how statistics is commonly used in the real world. There are two major parts to this course: Data which includes graphical and numerical summaries to describe the distribution of a variable, or the relationship between two variables and data production to learn how to design good surveys and experiments, collect data from samples that are representative of the whole population, and avoid common sources of biases. Probability using the language of probability and the properties of numerical summaries computed from random samples, we learn to draw conclusions about the population of interest, based on our random sample, and attach a measure of reliability to them. Course Objectives Distinguishing and understanding of basic concepts of statistics.

3. Inference probability and probability distribution.

# **Course Learning Outcomes**

Outcomes
Knowledge
K1 Distinguishing and understanding of basic concepts of statistics.
K2 Describing data with graphs and numerical measures.
K3 Inference probability and probability distribution.
Skills
S1 Students will use various techniques for concisely describing data.
S2 Students will effectively apply the probability and introduce some basic tools used in working with probabilities.
Competence
C1 Describing data at hand in some concise way.
C2 Describing data using graphical methods.

# Learning Resources

Course textbook	Introduction to Probability and Statistics, 13 <sup>th</sup> Edition, William Mendenhall, Robert J. Beaver and Barbara M. Beaver.		
Supporting References	Elementary Statistics - A step by step approach, 11 <sup>th</sup> Edition, Allan G. Bluman.		
<b>Teaching Environment</b>	☑ Classroom □ Laboratory □ Learning platform □ Other		

# Meetings and Subjects Timetable

Week	Торіс	Learning Methods	Tasks
1	Course Syllabus: Explanation of the study plan for the course, and what is expected to be accomplished by the students. Technology Preliminaries: Moodle, Microsoft Teams.	Face to Face Learning	
2	<ul><li>Chapter (1): Describing Data with Graphs</li><li>1.1 Variables and Data.</li><li>1.2 Types of Variables.</li></ul>	Face to Face Learning	
3	<ul><li>1.3 Graphs of Categorical Data.</li><li>1.4 Graphs of Quantitative Variables.</li><li>1.5 Relative Frequency Histograms.</li></ul>	Face to Face Learning	
4	<ul> <li>Chapter (2): Describing Data with Numerical Measures</li> <li>2.1 Describing a Set of Data with Numerical Measures.</li> <li>2.2 Measures of Center.</li> <li>2.3 Measures of Variability.</li> </ul>	Face to Face Learning	Quiz
5	2.4 On the Practical Significance of the Standard Deviation.	Face to Face Learning	Assignment

	2.5 A Check on the Calculation of <i>s</i> .			
6	<ul><li>2.6 Measures of Relative Standing.</li><li>2.7 The Five-Number Summary and the Box Plot.</li></ul>	Face to Face Learning	Quiz	
7	<ul> <li>Chapter (3): Describing Bivariate Data</li> <li>3.1 Bivariate Data.</li> <li>3.3 Scatterplot for Two Quantitative Variables.</li> </ul>	Face to Face Learning		
8	Midterm Exam			
9	<ul> <li>3.4 Numerical Measures for Quantitative Bivariate Data.</li> <li>Chapter (4): Probability and Probability Distributions</li> <li>4.1 The Role of Probability in Statistics.</li> </ul>	Face to Face Learning		
10	<ul><li>4.2 Events and the Sample Space.</li><li>4.3 Calculating Probabilities Using Simple Events.</li></ul>	Face to Face Learning	Assignment	
11	<ul><li>4.5 Event Relations and Probability Rules.</li><li>4.6 Independence, Conditional Probability, and the Multiplication Rule.</li></ul>	Face to Face Learning		
12	4.8 Discrete Random Variables, Their Probability Distributions.	Face to Face Learning	Quiz	
13	<ul> <li>Chapter (5): Several Useful Discrete Distributions</li> <li>5.2 The Binomial Probability Distribution.</li> <li>5.3 he Poisson Probability Distribution.</li> </ul>	Face to Face Learning		
14	<b>Chapter (6): The Normal Probability Distribution</b> 6.2 Probability Distributions for Continuous Random Variables.	Face to Face Learning		
15	<ul><li>6.3 The Normal Probability Distribution.</li><li>6.4 Tabulated Areas of the Normal Probability Distribution.</li></ul>	Face to Face Learning		
16	Final Exam			

# Assessment Methods and Grade Distribution

Assessment Methods	GradeWeight	Assessment Time (Week No.)	Link to Course Outcomes
Mid Term Exam	30%	8	K1, K2, C1
Various Assessments *	30%	Continuous	S1, S2, C1, C2
Final Exam	40%	16	K1, K2, K3, C1
Total	100%		

\* Includes: quiz, in class and out of class assignment, presentations, reports, videotaped assignment, group or individual projects.