Philadelphia University
Department of Basic Sciences and Mathematics

First Semester **Course Syllabus** **2014/2015**

Course Title Elementary Probability and Statistics
Course Code 250231
Lecturer Ameina Al Taani
Office Room 1016
Office Hours Sun. to.Thu. from 10:00 to 11:00
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Course Description
This is an introductory course in statistics. The course is planned so that students learn the basic concepts needed in probability theory and statistics. It familiarizes students with statistical terms such as population, sample, sample size, random variable, mean, variance, and much more. The course covers materials such as collecting data, graphical methods, descriptive statistics, regression and correlation and probability basics.

Textbook and Supporting Materials
1. Jaffar S. Almousawi, Introduction to Statistics, Dar Albarraka for Publishing.
2. Richard A. Johnson, Statistics: Principles and Methods, 6th Edition, John Wiley and Sons,Inc. 2010.

Teaching methods:
Lectures and problem solving.

Topics by the Week

Weeks	Chapter	Topics
1	**Chapter one : Introduction Statistics what is it?**	Introduction and Data Collection. Types of Data and Their Sources. Some Important Definitions Population, Sample, Parameter, statistic, Descriptive statistics, And Inferential Statistics
2	**Chapter two: Data and data organizing**	Presenting Data in Tables and Charts, Organizing Numerical Data, The Ordered Array and Stem-Leaf Display, Tabulating and Graphing Univariate Numerical Data, Frequency Distributions: Tables, Histograms
3	**Chapter three: Summarizing data numerically**	Numerical Descriptive Measures, Measures of Central Tendency, Quartiles, Measures of Variation, Shape

1	**Chapter four: Simple Linear Correlation and Regression**	Simple Linear Correlation and Regression, The Scatterplot, The Least-Squares Equation, Slope of a Line, Intercept
3	**Chapter five: Probability concepts and Distributions**	Basic Probability, Sample spaces and events, Simple Probability, Joint Probability, Conditional Probability, Statistical independence, Counting Rules
1	**Chapter six: Discrete Probability Distributions**	Some Important Discrete Probability Distributions. The Probability of a Discrete Random Variable, Binomial Distribution
2	**Chapter seven: The Normal Probability Distribution**	The Normal Distribution, The Standardized Normal Distribution
1	**Chapter eight: Sampling Distributions**	Sampling Distributions, Sampling Distribution of the Mean, The Central Limit Theorem
1	**All Chapters**	Review

Course module objectives:

Upon completion of the course, the student will be able to:

1. Collect data

2. Present data using various graphical methods

3. Calculate and interpret numerical summaries

4. Use and apply laws of probability and learn how these laws are used in statistical inference

5. Use the concepts of sampling distributions and learn how it applies in making statistical inferences be based on sample of data

6. Be familiar with some important discrete and continuous distributions

7. Make appropriate use of statistical inference

Learning Outcomes

- **Knowledge and understanding**

The student will have the knowledge and understanding of how to apply statistical concepts into real world problems. The course also serves as a prerequisite to other statistics courses such as probability theory and mathematical statistics.

- **Cognitive skills (thinking and analysis)**

The student will be taught how to think statistically. In other words, the course assists the student in the understanding and application of many statistical methods and how to analyze real world data.

Assessment Distribution
Students will be assessed based on a 100 total marks, which are distributed as follows.

Exam	Type Expected	Time Points Allocated
First	19/11/2013 - 27/11/2013	20%
Second	28/12/2013 - 6/1/2013	20%
Quizzes	3 quizzes	20%
Final	1- 9/02/2014	40%

Class Attendance
Attendance is expected of every student. Being absent is not an excuse for not knowing about any important information that may have been given in class. Under the University's regulations, a student whose absence record exceeds 15% of total class hours will automatically fail the course. Students who in any way disrupt the class will be expelled from the classroom and will not be allowed to return until the problem has been resolved.

Project Assignments
Students are allowed to work together on a project assignment; however, the work that is turned in by each student must be his own. For instance, a mere copy of another student's work will not be graded. A written project must be properly presented to receive full credit. A late project is penalized one point per day after its due date. A project sent by email will not be accepted.

Late Exams
Late (make-up) exams will be given only to students who have a valid excuse and are able to provide a written document for its verification. The level of difficulty of a late exam is about 50% higher than that of the corresponding regular exam. All late exams will be conducted during the last week of the semester. Each student is allowed only one make-up in a semester, either for the first exam or the second, but not both. There is no make-up for a late exam.

Ameina AlTaani