KINGDOOM OF SAUDI ARABIA		المملكة العربية السعودية
King Saud University		جامعة الملك سعود
Deanship of Common First Year		عمادة السّنة الأولى المشتّركة
Department of Basic Sciences		قسم العلوم الأساسيّة

Syllabus and Contents of Course for Second Semester 1439-1440

Course Name: Introduction to Probability and Statistics. **Credit Hours:** 3 hours

Course Number: Stat 101 **Actual Hours:** 4 hours

Course Coordinator: Prof. Dr. Hamid Al-Oklah **Office:** 2469

E-mail: stat140@cfy.ksu.edu.sa **Phone:** 94582

Textbook: Introduction to Probability and Statistics, Second Edition, 2018.

Authors: Abouammoh A., Sultan K., Kayid M. and Sharahili M.

Some References:

1-Nicholas, Jackie. Introduction to Descriptive Statistics. Mathematics Learning Centre, University of Sydney, 1990.

2-Samules, M.L., Witmer, J.A and Schaffner, A., Statistics for the Life Sciences. Fourth edition, Pearson, New York, 2012.

3-Walpole, R.E., Myers, R.H. and Myers, S.L. and Ye, K., Probability and Statistics for Engineers and Scientists, Ninth Edition, Prentice, New York, 2012.

Goals: In this course

a) The student will able to understand some statistical concepts and using there.

b) The student will able to classify the variables and data in to quantitative qualitative.

c) The student will able to compute some measurements of central tendency, determine some position measurements and their representation on Box Plot diagram.

d) The student will able to compute some measurements of dispersion, determine some measurements which used for compare the variation between two (or more) sets.

e) The student will able to determine the space of elementary events of some random experiment, compute the probability of events which dependent on a random experiment, understanding the conditional probability, using the total probability formula and Bayes formula in probability calculation.

f) The student will able to understand the concept of the random variable and its probability distribution, types of the random variables, computing the mean and standard deviation of discrete random variable, the meaning of continuous random variable, understanding applications of uniform, exponential and normal distributions.

g) The student will able to understand the concept of the point and interval estimation for a parameter of population, determine the confidence interval for a parameter of population, understanding the concept of the test hypothesis and perform testes for parametric hypotheses.

h) The student will able to calculate Pearson's simple linear correlation coefficient, determination the straight linear regression (type Y on X) according to the lest square method.

Course Schedule and Contents:

Chapter	Week	Section	Examples	Exercises for Students
Chapter One DESCRIPTIVE STATISTICS	Week 1	Explanation of the Crocker plan for the course 1.0- Introduction. 1.1- Basic Concepts and Dentitions.	All examples	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11-a-b, 13-a-b, 25-a-b, 26-a-b, 27.
	Week 2	1.2- Organizing the Data. 1.3- Graphical Representation of the Data	All examples	
	Week 3	1.4- Measures of Central Tendency	All examples	11-c-d, 12, 13-c, 14, 15-a-b, 16, 17, 19, 20, 21, 25-c.
	Week 4	1.4- Percentiles, Deciles, Quartiles, Extreme Values and Five Numbers.	All examples	
	Week 5	1.5- Measures of dispersion, Coefficient of Variation and z-scores.	All Contents	15-c, 18, 19, 22, 23, 24, 26-c.
Chapter Two PROBABILITY	Week 6	2.1- Mathematical Concepts. 2.2- Definitions and Concepts in Probability Calculus	All examples	1, 2, 3, 4, 5, 6, 7, 8, 9, 10. 11, 12, 13, 16, 18.
	Week 7	2.3- Concept of Probability Function.	All examples	
		2.4- Conditional Probability and Independence of Events.	All examples	14, 15, 17, 19, 20.
Chapter Three RANDOM VARIABLES AND PROBABILITY DISTRIBUTIONS	Week 8	3.1- Concept of Random Variables and Their Distributions.	All examples	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 13, 15, 16.
	Week 9	3.2- Discrete Random Variables and Their Distributions.	All examples	
	Week 10	3.3- Continuous Random Variables and Their Distributions.	All examples	17, 18-a-b, 19, 20-a-b-c, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31.
Chapter Four INTRODUCTION TO STATISTICAL INFERENCE	Week 11	4.1- Definitions and Concepts 4.2- Estimation of the Population Mean. 4.3- Estimation of the Population Proportion.	All examples	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 27, 28, 29, 30.
	Week 12	4.4- Introduction to Hypotheses Testing. 4.5- Hypotheses Testing for the Population Mean.	All examples	16, 17, 18, 19, 20, 21, 31.
	Week 13	4.6- Hypotheses Testing for the Population Proportion.	All examples	22, 23, 24, 25, 26.
Chapter Five CORRELATION AND REGRESSION		5.1- Linear Correlation Coefficient.	All examples	1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 23-e-f, 24-b, 25-b, 26.
	Week 14	5.2- Simple Linear Regression.	All examples	2, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23-a-b-c-d, 24-a-c, 25-a.

Important Instructions:

1- Absence shall be counted from the first day until the last day preceding the final exams for the semester.

2- If the student delayed more than ten minutes of the lecture is absent, and if the presence during the first ten minutes register late.

3- The student is deprived of the final exam if the percentage of absenteeism exceeded 25% of the hours of attendance approved for teaching.

4- The student is evaluated during the semester based on:

a) The result of two midterm exams, each with a score of 25 degrees (total 50 degrees),

b) The result of two home works, each with a score of 5 degrees (total 10 degrees),

c) The final test result, with a score of 40.