**Department of Statistics & Operation Research-King Saud University**

**First Semester 1438/1439**

**Stat 324 – Probability and Statistics for Engineers**

Instructor: **Dr. Ibrahim A. Alwasel** Office: **2B42** Office hours: **Sun. Tues. 10-12**

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**Catalog Description**

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| **Week** | **Sections** | **Subjects** |
| **W1( 26 /12/1438)** | 1.1, 1.3, 1.4 | Introduction to Statistics & Data Analysis |
| **W2( 04/01/1439)** | 2.1, 2.2, 2.3, 2.4, 2.5 | Sample Space, Events, Counting Sample Points (only Theorem 2.8), Probability of an Event, Additive Rules |
| **W3( 11/01/1439 )** | 2.6, 2.7, 2.8 | Conditional Probability, Independent Events, Multiplicative Rules, Bayes’ Rule |
| **W4( 18/01/1439 )** | 3.1, 3.2,3.3 | Concept of Random Variable, Discrete Probability Distributions, Continuous Probability Distributions |
| **W5( 25/01/ 1439 )** | 4.1, 4.2, 4.3, 4.4 | Mean of a Random Variable, Variance, Means & Variances of a Linear Combination of Random Variables (for independent variables), Chebyshev’s Theorem |
| **W6( 02/02/1439 )** | 5.2, 5.3, 5.4, 5.6 | Discrete Uniform Distribution, Binomial Distribution, Hypergeometric Distribution, Poisson Distribution |
| **W7( 09/02/1439 )** | 6.1, 6.2, 6.3  6.4 | Continuous Uniform Distribution, Normal Distribution, Areas Under the Normal Curve, Applications of the Normal Distribution |
| ***The First Term Exam at Tuesday* ( 11/02/1439) from 7-8:30 pm (Till** **Chebyshev’s Theorem sec 4.4 is included)** | | |
| **W8( 16/02/1439)** | 6.6, 8.1, 8.2, | Exponential Distribution, Random Sampling |
| **W9( 23/02/1439)** | 6.6, 8.1, 8.2, | Exponential Distribution, Random Sampling |
| **W10(01/03/1439)** | 8.4, 8.5, 8.7 | Sampling Distributions, Sampling Distribution of Means, t-Distribution |
| **W11(08/03/1439)** | 9.1, 9.2, 9.4, 9.5 | Introduction to Estimation, Statistical Inference, Estimating the Mean, Standard Error |
| **W12(15/03/1439)** | 9.1, 9.2, 9.4, 9/5 | Introduction to Estimation, Statistical Inference, Estimating the Mean, Standard Error |
| ***The Second Term Exam at Sunday* ( 15/03/1439) from 7-8:30 pm (Till Sampling Distributions sec 8.7 is included)** | | |
| **W13(22/03/1439)** | 9.7, 9.9, 9.10 | Estimating the Difference Between Two Means, Estimating a Proportion, Estimating the Difference between Two Proportions |
| **W14(29/03/1439)** | 10.1, 10.2 | Statistical Hypotheses, Testing a Statistical Hypothesis |
| **W15(06/04/1439)** | 10.3, 10.5, 10.7,  10.8—10.12 | One- and Two-Tailed Tests, Tests Concerning a Single Mean, Tests on a Single Mean when variance is unknown and Tests on Two Means, Test on a Single Proportion, Test on two Proportions |

**Textbook Walpole**, R. E.; Myers, R. H. and Myers, S. L., Probability *and Statistics for Engineers and Scientist*s, 7th ed., Prentice Hall, 1998.

**Grading: Please note that we have announce in clear Cut way for all students from the beginning:**

**Participation, Quizes & Home works**: 0%

**Midterm I** 30% (up to the end of chapter 4) **Midterm II** 30% (Chapters 5, 6 and 8)

**Final Exam** 40% (Chapters 9, and 10)

**Homework and exam policy**

Collaboration on homework assignments is encouraged. You may consult outside reference materials, other students, the instructor, or anyone else. There is one restriction: you must write, type, or otherwise record your answers yourself, alone, so that your homework reflects your understanding. No late homework or make-up exams without prior approval; penalties may apply.

**Preliminary Course Outline**

We will cover the book by Walpole, Chapters 1–10 except chapter 7.