Department of Statistics & Operation Research -King Saud University
First Semester 1447H /2025
Stat 109 Biostatistics

Instructor: **Kholoud Basalim**
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Office: **Building 25, Office: 2B05 second floor**
Office hours: **Sunday: 11:05 AM – 11:35 PM - Monday: 11:05 AM – 11:35 PM**

Course Timeline

Week	Title
W1	**Chapter 1: Introduction to biostatistics:** Some Basic Concepts, Types of variables, Probability Sampling (Simple random sampling, Stratified sampling)
W2	**chapter 2: Grouped Data:** The Frequency Distribution, Displaying Grouped Frequency Distributions
W3	**Chapter 2: Descriptive Statistics:** Measures of Central Tendency (mean, median, mode), Measures of Dispersion (range, variance, standard deviation, coefficient of variation)
W4+5	**Chapter 3: Basic Probability Concepts:** General Definitions and Concepts, Probability of an Event, Marginal Probability, Conditional Probability, Bayes' Theorem
	First Term Exam - Chapters 1, 2, 3
W6-7	**Chapter 4: Probability Distributions: Discrete:** Probability Distributions for Discrete Random Variables, Expected Value and Variance of a Discrete Random, Cumulative probability, Binomial Distribution, The Poisson Distribution
W8	**Chapter 4: Continuous Probability Distribution:** The Normal Distribution, The Standard Normal Distribution, The T-Distribution
W9	**Chapter 5: Sampling Distribution:** Sampling distribution of one and two sample means and one and two proportions
	Second Term Exam - Chapters 4 & 5
W10	**Chapter 6: Estimation:** Point Estimators, Interval Estimation
W11	**Chapter 7: Hypothesis Testing:** Null and Alternative Hypotheses, Type of errors, Concept of P-value, Hypothesis Testing: A Single Population Mean (μ)
W12-13	**Chapter 7: Hypothesis Testing:** The Difference Between Two Population Means: Independent Populations ($\mu_1 - \mu_2$), Paired Comparisons ($\mu_D = \mu_1 - \mu_2$), Hypothesis Testing: A Single Population Proportion (P), Hypothesis Testing: The Difference Between Two Population Proportions ($P_1 - P_2$)
	Final Exam: Monday 22/12/2025 – (2-7-1447H) at 1:00 PM **Chapters 6 & 7**

Required textbooks:

- Foundations of Biostatistics by Islam, M. Ataharul, Al -Shiha, Abdullah

Additional textbooks:

- Bernard Rosner. Fundamentals of Biostatistics.
- Pagano, Gauvreau. Principles of Biostatistics, 2nd edition.

Attendance:

Student missing more than 25% of the total class hours won't be allowed to write the final exam.

Grading policy:

First Midterm: 30 Marks (1:30 hours)
Second Midterm: 30 Marks (1:30 hours)
Final Test: 40 Marks (2 hours)