

Department of Statistics & Operation Research -King Saud University

First Semester 1447H /2026

Stat 145 Biostatistics

Instructor: Munirah Alothman

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Office: Building 5, Office: 66 third floor (College of sciences)

Office hours: Sunday: 12:00 PM – 1:00 PM – Monday: 12:00 PM – 1:00 PM Tuesday:
12:00 PM – 1:00 PM - Wednesday 10:00 AM-1:00 AM

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 ($P_1 - P_2$)
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)