King Saud University, College of Sciences
Department of Statistics & Operations Research
SYLLABUS STAT 109 – Biostatistics - First Semester 1446

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Week	Title
W1	Introduction to bio-statistics. (1.1-1.4).
W2	Types of data and graphical representation (1.1-1.4).
W3	Descriptive statistics: measures of Central tendency- mean, median, mode (2.1 -2 .6 Excluding stem plot percentiles).
W4	Measures of dispersion-range, standard deviation, coefficient of variation ((2.1 -2 .6, Excluding stem plot percentiles).
W5	Calculating measures from an ungrouped frequency table ((2.1 -2 .6 , Excluding stem plot percentiles).
W6	Basic probability, conditional probability, concept of independence, sensitivity, specificity (3.1-3.6).
W7	Bayes theorem for predictive probabilities (3.1 -3.6).
W8	Some discrete probability distributions: cumulative probability (4.1-4.4).
W9	Binomial and Poisson -their mean and variance (4.1-4.4, Excluding the use of binomial and Poisson tables).
	First Midterm exam (chapters 1, 2, 3)
W\0	Continuous probability distributions: Normal distribution (4.5 - 4.8)
W11	Standard normal distribution and t-distributions (4.5 - 4.8)
W12	Sampling with and without replacement, sampling distribution of one and two sample means and one and two proportions (5.1 - 5.7, Excluding sampling without replacement).
W13	Statistical inference: Point and interval estimation, Type of errors, Concept of P-value (6.2 - 6.6, 7.1 - 7.6 Excluding variances not equal page 181-182).
	Second Midterm exam (chapters 4, 5)
W14	Testing hypothesis about one and two samples means including paired data – different cases under normality. (6.2 -6.6, 7.1 - 7.6, Excluding variances not equal page 181-182).
W15	Testing hypothesis about one and two samples proportions including paired data – different cases under normality. (6.2 - 6.6, 7.1 - 7.6, Excluding variances not equal page 181-182).
	Final Exam chapters 6, 7

Course Delivery	Lectures
Grading Policy	First term exam: 30 Marks (1.5 hours)
	Second term exam: 30 Marks (1.5 hours)
	Final exam: 40 Marks (2 hours)
Text Book	Foundations of Biostatistics by Islam, M. Ataharul, Al-Shiha, Abdullah

Exams	Topics covered	Mark
First Midterm	Chapters 1,2,3	30
Second Midterm	Chapters 4,5	30
Final exam	Chapters 6,7	40

Notes:
1.   This course is a coordinated course taught by several professors. The exams are common for all sections. Dates of the exams will be announced in two weeks. Exam dates will not be changed once they have been fixed.
2.   Attendance is important. Latecomers will be marked absent. Students missing more than 25% of the lectures will be deprived of sitting the final exam.

Further References:
1.   Bernard Rosner. Fundamentals of Biostatistics.
2.   Pagano, Gauvreau. Principles of Biostatistics, 2nd edition.