

**Department of Statistics & Operation Research**  
**King Saud University**  
**First Semester 2020 - 2021**

**Stat109**

**Instructor: Dr. Rafik Aguech**

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

**Catalog Description**

<b>Week</b>	<b>Title</b>
<b>W1</b>	Introduction to bio-statistics (1.1-1.4)
<b>W2</b>	Types of data and graphical representation (1.1-1.4)
<b>W3</b>	Descriptive statistics: measures of Central tendency- mean, median, mode (2.1 -2 .6 Excluding stem plot percentiles)
<b>W4</b>	Measures of dispersion-range, standard deviation, coefficient of variation (2.1 - 2.6 Excluding stem plot percentiles)
<b>W5</b>	Calculating measures from an ungrouped frequency table (2.1 - 2.6 Excluding stem plot percentiles)
<b>W6</b>	Basic probability, conditional probability, concept of independence, sensitivity, specificity (3.1 -3.6)
<b>W7</b>	Bayes theorem for predictive probabilities (3.1-3.6)
<b>W8</b>	Some discrete probability distributions: cumulative probability (4.1-4.4)
<b>W9</b>	Binomial and Poisson -their mean and variance (4.1 - 4.4 Excluding the use of binomial and Poisson tables)
<b><i>Partial Exam</i></b>	
<b><i>Chapters 1, 2 and 3</i></b>	
<b>W10</b>	Continuous probability distributions: Normal distribution (4.5 - 4.8)

<b>W11</b>	Standard normal distribution and t-distributions (4.5-4.8)
<b>W12</b>	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)
<b>W13</b>	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)
<b><i>Electronic Assignment</i></b> <b><i>Chapters 4 and 5</i></b>	
<b>W14</b>	Testing hypothesis about one and two samples means and proportions including paired data – different cases under normality. (6.2 -6.6, 7.1 - 7.6, Excluding variances not equal page 181-182)
<b><i>Final Exam</i></b> <b><i>Chapters 6 and 7</i></b>	

### Assignments and Exams:

<b>Exams</b>	<b>Date</b>	<b>Time</b>	<b>Mark</b>	<b>Method</b>
First Midterm			30	Writing exam in the faculty
Assignment	20/11/2020	20:00 to 21:00	30	Electronic exam on Blackboard
Final exam	20/12/2020	13:00 to 15:00	40	Writing exam in the faculty

### Attendance:

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