Course Outline
STAT 575: Biostatistics

Instructor: Prof. Khalaf S. Sultan

Time: Monday 11:00am - 2:00pm

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Recommended Book:

1- Rosner, B. (2015). Fundamentals of Biostatistics, 8th edition, Cengage Learnin.
2- Daniel, W., Cross, c. and Pstat, p. (2013). Biostatistics: A Foundation for Analysis in the Health Sciences. 10th edition. Wiley.

Topic	No of Weeks
Introduction to Bio-Statistics, types of data and graphical representation	1
Descriptive statistics: Measures of Central tendency- Mean, median, mode, Measures of dispersion, Range, Standard deviation, coefficient of variation. Calculating Measures from an Ungrouped Frequency Table Approximating Measures from Grouped Data.	1
Basic probability, conditional probability, concept of independence, Sensitivity, Specificity etc, and Bayes Theorem for predictive probabilities.	2
Some discrete probability distributions: cumulative probability distribution, Binomial, and Poisson –their mean and variance	1
Continuous probability distributions: Normal distribution, Standard normal and t distributions.	1
Sampling distribution of one and two sample means and one and two proportions.	1
Statistical inference: Point and interval estimation, Type of errors, Concept of P-value, testing hypothesis about one and two samples means and proportions including Paired data – different cases under normality.	2
ANOVA: 1 and 2-way ANOVA. Methods for multiple comparisons.	1
Categorical data analysis and chi-square tests	2
Simple and Multiple Regression Analysis, Best regression(Forward, Backward, stepwise)	2
Logistic regression: One and multiple predictors. Interpretation of the parameter estimate in terms of the odds ratio and C=Roc.	1

Assignments Tests:

Assignments	Will be given during the class	20 Marks
Midterm Exam		30 Marks
Projects & presentations		10 Marks
Final Exam		40 Marks

Computing facilities
Excel and R
Attendance:

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