

BARI ENGLISH MEDICAL CURRICULUM
MEDICAL STATISTIC
COURSE PROGRAM
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Basic concepts. Measurement, variable, scale of measurement.

Population and Sample. Simple random sample. Randomization.

The frequency distribution. The Sturges rule.

Descriptive statistics: measure of central tendency; measure of dispersion.

Basic Concepts of probability: classical and frequentist probability, elementary properties of probabilities. Bayes theorem, application on screening tests, sensitivity, specificity, predictive values.

Probability distributions: Binomial distribution, Poisson distribution, Normal distribution. The standard Normal distribution. Sampling distributions.

Estimation. Confidence intervals. Confidence interval for a population mean with known and unknown population variance. Confidence interval for the difference of two population mean. Confidence interval for a proportion. Confidence interval for the difference of two proportions. Determination of sample size.

Hypotesis testing. Type I error and Type II error. A single population mean. The difference between two population means. A single proportion. The difference between two proportions. The ratio of two population variance (F-statistic). Determination of sample size.

Analisisys of Variance. Completely randomized design. Notes on other design of the study.

Analysis of frequencies. The chi-square test. Mantel Haenszel statistic. McNemar test. The Fisher exact test. Chi-square for trend.

Correlation.

Simple linear regression. Notes on multiple regression. Logistic regression

Distribution free methods: Wilcoxon test for paired and unpaired data. Kruskal Wallis test. Spearman Correlation Coefficient.

Survival analysis. The Kaplan Meier curve. The log-rank test. Note on Cox regression.

Diagnostic accuracy. Sensitivity, specificity and predictive values of a diagnostic test. ROC curves.

Textbook.

Wayne W. Daniel, Biostatistics: A Foundation for Analisis in the Health Science, Wyley Ed.
M.J. Campbell and T. D.V. Swinscow, Statistics at Sqaure one, BMJ Publishing Group