Course number:

Stat106

Course title:

Biostatistics

Course outline( brief ):

Descriptive statistics: qualitative and quantitative data, graphical representation, central tendency measures, variation measures, some basic probability rules, random  variable, binomial distribution, Poisson distribution, normal distribution and its applications, confidence interval for mean and for proportion.

: Text book

Elementary Biostatistics with applications from Saudi Arabia

Author:

Dr. Nancy A Eyink Hasabelnaby

: Publisher

King Saud University , 1996

Main references:

Biostatistics: A foundation for analysis in the health science  by W.A. Daniel (latest edition)

**Detailed contents**:

Introduction:

Meaning of Biostatistics, Descriptive statistics, inferential statistics, population and sample, qualitative, quantitative, discrete and continuous variables.

Organzing the data:

Data presentation in simple and cumulative frequency tables, graphical presentation using histogram, polygon, curves, and cumulative frequency curve.

Central tendency measures:

Mean, median, and mode for grouped and ungrouped data. Pros and cons of these measures.

 Variability measures:

Range, Variance, and standard deviation for for grouped and ungrouped data. Coefficient of variation.

Basic concepts of probability:

Random xperiment, sample space, events, union, intersection, complement of events, probability axioms in equally likely sample space, traditional definition of probability, Mutually exclusive events, conditional probability, independent events.

Discrete probability distributions:

Concept of random variable and probability mass function, expected  value of a random variable, binomial distribution, Poisson distribution, expected value and variance of  the , binomial and Poisson distributions.

Continuous probability distributions:

Normal distribution, practical applications on the normal distribution, central limit theorem and its applications to calculate probabilities concerning the mean of a sample.

Statistical inference:

Point and intreval estimate for mean in both cases known and unknown variance. Point and intreval estimate for proportion.