

Biostatistics, Instrumentation and Techniques (BSCZO 303)

UNIT WISE CONTENT (BSCZO 303)

Block I: Biostatistics

Unit 1: Data collection and presentation

Definitions of biostatistics, Statistical symbol, Scope & Applications of biostatistics, Collection (Random and non random sampling or stratified sampling), Organization and representation of data (Graph, Histogram, Scatter diagram).

Unit 2: Measures of central tendency

Mean (Arithmetic), Mode and Median. Major Characteristics of each measures of central tendency. Advantage and disadvantage of mean, mode and median.

Unit 3: Measures of Variability/ Dispersion

Range, Interquartile Range, Mean deviation, Standard deviation, Variance and coefficient of variation.

Block II: Instrumentation and techniques

Unit 4: Principles and uses of analytical instruments

pH meter, UV-visible spectrophotometer, Centrifuges (clinical, high-speed and ultra- centrifuge), Geiger Muller and scintillation counters

Unit 5: Microtomy and Microscopy

Tissue preparation, Fixation, Block preparation, Microtomy (paraffin and frozen tissue sectioning). Types of Microscopes: Bright field, Dark-field, Phase contrast, Fluorescence, Confocal and Scanning and transmission electron microscopes.

Unit 6: Separation techniques and cryopreservation

Chromatography, Electrophoresis and cryopreservation