Course Code	Title of Course	Credit Hours
MATH-124	Basic Biostatistics	3(3-0)

Learning Outcomes:

Students will be able to:

- Identify and calculate measures of central tendency, variability, and shape to summarize and describe data sets effectively.
- Demonstrate proficiency in applying probability concepts and understand key probability distributions, including Normal, Poisson, and Binomial distributions.
- Gain the ability to apply various sampling techniques, calculate sampling errors, and construct confidence intervals for data analysis.
- Perform and interpret correlation and regression analysis to explore the relationships between variables in biostatistical data.

Course Contents:

Introduction to Statistics; Types of statistical applications; Data presentation: Figures, Graphs, Tables; Variables Scales of measurements; Descriptive Statistics; Measures of central tendencies; Measures of variability; Measures of shapes; Probability and Probability Distributions: Normal, Poisson, and Binomial; Sampling techniques; Sampling errors; Confidence Intervals; Correlation; Regression; Sampling and various sampling techniques.

Suggested Readings:

Text Books

1. Rosner, Bernard. Fundamentals of Biostatistics (7th Edition).
2. Burt Gerstman, Barbara. Basic Biostatistics: Statistics for Public Health Practice.

Reference Books

1. Introduction to Statistical Theory Part- I by Sher Muhammad and Dr. Shahid Kamal (Latest Edition)
2. Pagano, Marcello, and Gauvreau, Kimberlee. *Principles of Biostatistics* (2nd Edition).
3. Daniel, Wayne W., and Cross, Chad L. *Biostatistics: A Foundation for Analysis in the Health Sciences* (10th Edition).