BIOSTATISTICS (MSCBOT-606)

Syllabus

- **Data Collection:** Introduction; Collection of primary and secondary data; Selection of appropriate methods for data collection; Classification and tabulation of data; Data interpretation **Data Presentation:** Introduction; Graphic and Non-graphic presentation; Results communication Descriptive Statistics: Measures of central tendencies (Mean, Median, Mode and other averages); Measures of dispersion and deviation (Range, Mean deviation, standard deviation and standard error)
- **Statistical inference and Probability:** Correlation (Correlation Coefficient); Regression (Linear, partial and multiple), Probability: Introduction; Theory; Applications in biology; Probability distribution
- **Advance Analysis Methods:** Introduction of cluster analysis and multivariate analysis
- **Testing of Hypothesis:** Basic concepts; Limitations, Chi square, t test, Tukey's Q test,
- **Analysis of Variance (ANOVA):** One way ANOVA, Two way ANOVA,
- **Design of Experiments: Introduction;** Basic principles; Randomized block design (RBD), Completely RBD, Split plot design (SPD), Complete and incomplete block designs, Augmented design, Grid and honeycomb design

Unit Schedule

Block-1- The Data: Basic Concepts
Unit-1-Data Collection
Unit-2-Data Presentation

Block-2-Statistical Methods
Unit-3- Descriptive Statistics
Unit-4- Statistical Inference and Probability
Unit-5- Advance Analysis Methods

Block-3-Hypothesis Testing and Experimental Designs
Unit-6-Testing of Hypothesis
Unit-7-Analysis of Variance (ANOVA)
Unit-8-Design of Experiments