(For MIC Students)

MAS2452 **BIOSTATISTICS** **5hr/4cr**

Objective:

To introduce to the students the basic techniques in statistics which will enhance their ability to validate their experimental results.

The course deals with the fundamentals of biostatistics, sampling methods, data types and presentation, measures of central tendencies and dispersion, distribution patterns and various tests of inferential statistics.

Unit I:

Definition of statistics- Characteristics of statistics- Uses of statistics in Biology- Data types- Collection of data- Classification- Tabulation- Diagrammatic representation.

Unit II:

Measures of central tendencies: Mean and its types- Arithmetic mean, Geometric mean, Harmonic mean. Median, Mode, Measures of Dispersion: Range, Quartile deviation, Mean deviation, Standard deviation, Co-efficient of standard deviation, Standard error, Variance.

Unit III:

Correlation Analysis: Types of correlation- Karl Pearson's co-efficient of correlation- Rank correlation. Regression lines.

Unit IV:

Sampling: Types of sampling- Parameters and statistic- Null and alternate hypothesis- Test of significance of small samples-T-test, F-test and chi-square test for goodness of fit.

Unit V:

Analysis of variance- One-way and two way classification- Latin square design.

References:

1. S. Palanichamy& Manoharan, 1990. **Statistical Methods for Biologists**, Palani Paramount publications.
2. S. Arumugam & A.Thangapandian Issac, 2004. **Statistics**, New Gamma publishing House.
3. Gupta, **Statistical Methods**, 2001. S.Chand&co.
4. R.Subatra & Ms.R.Shrividya, 2006. **Probability and statistics**, Tech-Max publications.