Biotechnology
B.Sc- II Year, Semester – IV
Core Course DSC-4

BIOSTATISTICS AND BIOINFORMATICS

UNIT-I

1.1. Introduction to biostatistics, History and applications.
1.2. Concept of sampling and sampling distributions.
1.3. Measures of Central tendency (Mean, Median, Mode)
1.4. Measures of deviation (Standard deviation, Variance and Co-efficient of variation)
1.5. Concept of Probability, basic laws and its application to Mendelian segregation.
1.6. Concept of Probability distribution, Binomial and Poisson distribution, Normal distribution and their applications in biology.

UNIT-II

2.1 Concept of Test of hypothesis: applications of t – test statistics to biological problems/ Data – Chisquare statistics, applications in biology.
2.2. Simple Correlation and Regression.
2.3. Concept of Analysis of Variance(ANOVA) (One – Way Classification).
2.4. ANOVA – Two-way Classification.
2.5. Graphical representation of data.
2.6. Importance of statistics in Biology.

UNIT-III

3.1. Usage of MD DOS commands: Basic concepts of Internal and external commands.
3.2. Directory and File commands, Copying, Erasing, Renaming and Displaying files.
3.3. Microsoft word: Concept of toolbar, Character, Paragraph and document formatting.
3.4. Drawing tool bar, header, footer, document editing, page set up, short cut keys, text and Graphics.
3.5. Microsoft Power Point: Slide presentation, slide layout and design, custom animation, Image importing, slide transition.
3.6. MS Excel –Applications, Fuctions, charts, pivot tables, validations, formatting of spread Sheet.

UNIT-IV

4.1. Introduction to Bioinformatics, History and emergence.
4.2. Biological databases (Nucleic acids and Protein)
4.3. Introduction to genomics and proteomics.
4.4. Biochips.
4.5. Data retrieval tools (BLAST, PubMED).
4.6. Applications of Bioinformatics.