B.Sc. Biotechnology: Semester-III BST304: Computer Application and Biostatistics	
Teaching Scheme Lectures: 3 hrs/Week Tutorials: 1hrs/Week Credits: 4	**Examination Scheme** Class Test -12Marks Teachers Assessment - 6Marks Attendance – 12 Marks End Semester Exam – 70 marks

Prerequisite: - BST106 Computer Fundamentals

Course Objectives:

1. To give overview of Introduction of computer science in biotechnology
2. To give complete knowledge of Computer software's & hardware
3. To describe ethical issues against the molecular technologies
4. To explain the Planning a program: Algorithm, Flowchart, Pseudo code, Plan of logic computer program
5. To explain Common terms, notions and Applications; Statistical population and Sampling Methods
6. To explain Fundamental principle of counting

Course Outcomes:

After completing the course, students will be able to:

CO1: Students will gain knowledge about to Know the various statistical methods to solve different types of problems

CO2: Students will gain knowledge to Operate various statistical software packages

CO3: This course will provide complete package to the students to identify activities and constitute IP infringements and the remedies available to the IP owner and describe the precautious steps to be taken to prevent infringement of proprietary rights in products and technology development

CO4: Students will be able to clearly communicate and Appreciate the importance of Computer in hospital and Community Pharmacy

CO5: Students will be able to explore new areas of research allied fields of science and Technology

CO6:Students will Appreciate the statistical technique in solving the pharmaceutical Problems

CO7: Apply the knowledge of mathematics and computing fundamentals to pharmaceutical

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applications for any given requirement and design and develop solutions to analyze pharmaceutical problems using computers.

Detailed Syllabus:

UNIT-1 Introduction of computer science in biotechnology
Introduction of computer science in biotechnology, Computer software's & hardware's, Relationship between hardware, system software, application software and user of a computer, ways of accruing software, steps involved in software development, Firmware & middleware. Planning a program: Algorithm, Flowchart, Pseudo code, Plan of logic computer program, Commonly used program for planning. Basic of Computer Language: Machine, Assembly and High Level Languages
UNIT-2 Introduction to Biostatistics
Introduction to Biostatistics, Common terms, notions and Applications; Statistical population and Sampling Methods; Diagrammatic and graphical presentation, Measures of Central Tendency (Mean, Median, Mode), Measures of dispersion (Range, Mean Deviation, Standard Deviation, Standard error, Quartile Deviation), combined mean and variance, covariance, Coefficient of variation
UNIT-3 Fundamental Statistics
Fundamental principle of counting, Factorial, Permutations and combinations, derivation of formulae and their connections, simple applications, Hypothesis testing, Chi square test and F-tests, Variant, One way and two way analysis of variants, ANOVA, Principles of experimental design and analysis

Text and Reference Books

1. A Textbook of Physical Chemistry, A. S. Negi, S. C. Anand
2. Physical Chemistry, Gilbert William Castellan
3. Physical chemistry, Walter John Moore
4. Organic Chemistry, Benjamin List, Keiji Maruoka Advanced Organic Chemistry, 4th ed. Part A: Structure and Mechanisms F. Carey and R. Sundberg, Kluwer Academic

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