

Branch Name:	B.Sc. Biotechnology
Program Code:	SC101
Course Name:	Fundamentals of Biostatistics
Course Code:	2SC1010522
Pre-requisite Course:	

Course Objectives:

1. The course covers the details about the data.
2. It includes sampling.
3. The Measures of central Tendency must be studied.

Teaching and Examination Scheme:

Teaching Scheme (Hours per week)				Evaluation Scheme (Marks)				
Lecture (L)	Tutorial (T)	Practical (P)	Credit	Theory (Marks)		Practical (Marks)		Total (Marks)
				University Assessment	Continuous Assessment	University Assessment	Continuous Assessment	
2	--	--	2	35	15	--	--	50

Subject Contents:

Sr. No	Topic	Total Hours	Weightage (%)
1	Introduction to Biostatistics • Introduction to Biostatistics: Definition of statistics and biostatistics, Development of biostatistics, Applications and role of biostatistics • Sources and Presentation of Data: Types of data and Collection of data, Classification and tabulation, Diagram and Graph, Frequency distributions of data. • Sampling: Introduction and Definition, Types of population, Sample, sampling variation and Bias, Listing of population and sample size	15	50%
2	Tools and Techniques for data-analysis • Measures of central Tendency: Mean, Median and Mode, Position of averages, Selection of the appropriate measure of central Tendency, Geometric mean and Harmonic mean • Chi-Square Test: The formula for Chi-Square Test, Distribution of Chi-Square Test and degree of freedom, Application of Chi-Square Test • Student t-test: Introduction, Student's t-Distribution, Application of t-Distribution • Analysis of Variance (ANOVA): Principle of ANOVA, Partitioning of ANOVA, Comparison of pairs of Means, Assumption Underlying ANOVA, Application of ANOVA	15	50%

Text Books: Bernard Rosner, Fundamental of Biostatistics 8th Edition. USA.

Reference Books:

1. P. Hanmanth Rao & K. Janardhan. (2010). Fundamentals of Biostatistics, 1st edition, I.K International Publishing House Pvt. Ltd.

List of Open Source Software/learning website:

Course Learning Outcomes (CLO): On completion of this course, the students will be able to:

CLO	Description	Bloom's Taxonomy Level
CLO1	Learn the basics of data collection and presentation.	1 Remember
CLO2	Basically, understand the factors responsible sampling.	2 Understand 3 Apply
CLO3	Apply the measure of central tendency in taking decisions	3Apply
CLO4	Analyze the data for conclusion .	4 Analyze
CLO5	Think critically about and applying various toolfor data analysis	5 Evaluate
CLO6	The Student would be able to create a new process by applying the biostatistics tool.	2 Understand 6 Create

Mapping of CLOs with POs & PSOs

Course Learning Outcomes	Program Outcomes (POs)												Program Specific Outcomes (PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CLO1	H	H	M	M	L	M	H	L	H	H	L	H	L	L	
CLO2		H		H	M	H	M	H	L		M	L	L	L	H
CLO3	L	L	H		L	M	M		L	L		H	M	M	H
CLO4	H	H	M	M	L			M	H		H	L		M	
CLO5	H	M	M	L	H	H	M		M	H		M	M		H
CLO6	L	L	H		M	L	L	M	M	L	H	M	M	L	M

H:High, M:Medium, L:Low