

GUJARAT TECHNOLOGICAL UNIVERSITY

B.E. SEMESTER : VIII

BIOTECHNOLOGY

Subject Name: **BIostatistics**

Sr. No.	Course Contents	Total Hrs
1.	Sampling techniques : methods of sampling, choice of sampling methods, sampling and non-sampling errors	1
2.	Diagrammatic and graphic representation of data : diagrammatic representation of data, significance of diagrammatic representation, limitations of diagrammatic representation, graphic representation of data, significance of graphic representation, limitations of graphic representation, illustrative problems	1
3.	Measures of central tendency : arithmetic mean, median, mode, geometric mean, harmonic mean, illustrative problems	4
4.	Measures of dispersion, skewness and kurtosis : dispersion, methods of measuring dispersion, skewness, kurtosis	2
5.	Probability and probability distributions : probability, theorems of probability, probability applications, probability distributions	3
6.	Correlation and regression : correlations analysis, types of correlations, methods of studying correlation, degree of correlation, significance test of correlation coefficient, regression analysis, linear regression analysis, significance test of regression coefficient, uses of regression analysis	4
7.	Chi-square test : characteristics of chi-square test, assumptions for validity of chi-square test, applications of chi-square test	3
8.	Tests of significance : comparison of means of two samples, comparison of means by three or more samples	6
9.	Experimental designs : basic concepts of experimental design, basic principles of experimental design, experimental designs (<i>completely randomized design – crd, randomized complete block design – rcd, latin square design-lcd, factorial experiments, confounding, split – plot and strip – plot designs</i>)	6
10.	Other Important calculations in fields	2

TEXT BOOK:

Introduction to Biostatistics, Veer Bala Rastogi,

REFERENCE BOOKS:

1. P.S.S. Sundar Rao, Introduction to Biostatistics and Research Methods, fourth edition, PHI
2. Alan Grafen and Rosie Hails, Modern Statistics for Life Sciences, edn 2008, Oxford University Press.
3. Thomson, Principles of Biostatistics, second ed.,
4. Walpole, Probability and Statistics for Engineers and Scientists