

Kanya Maha Vidyalaya, Jalandhar (Autonomous)

Scheme and Curriculum of Examinations of Four Year Degree Programme

(Under Credit Based Continuous Evaluation Grading System) (CBCEGS)

Bachelor of Science (Honours) (Bio-Technology) Four Year Degree Programme
Semester-III

Session: 2026-27

Bachelor of Science (Honours) (Bio-Technology) Semester-III										
Course Code	Course Title	Course Type	Hours per week L-T-P	Credits L-T-P	Total Credits	Marks				Examination Time (in Hours)
						Total	Ext.		CA	
							Th	P		
BBTM-3332	Biomathematics and Biostatistics	DSC	3-0-2	3-0-1	4	100	50	20	30	3+3

DSC-Discipline Specific Course

Bachelor of Science (Honours) (Bio-Technology)
Semester-III
Session 2026-27
Course Title: Biomathematics and Biostatistics
Course Code: BBTM-3332
Course Outcomes

Upon completion of this course, students should be able to:

CO 1: Calculate Significant digits, differentiation and integration and to understand the concept of population and samples, Random sampling.

CO 2: Calculate summary statistics (mean, median, mode, range, standard deviation and variance) from the data.

CO 3: Familiar with the graphical representation of data and concepts of correlation and regression.

CO 4: State the null hypothesis and alternative hypothesis (both one way and two ways) for the application of t-test, F test, Chi Square test and ANOVA.

Bachelor of Science (Honours) (Bio-Technology)
Semester–III
Session 2026-27
Course Title: Biomathematics and Biostatistics
Course Code: BBTM-3332

Examination Time: (3+3) Hours
L-T-P
3-0-1

Max. Marks: 100
Theory: 50
Practical: 20
CA: 30

Instructions for the paper setters: Eight questions of equal marks (10 marks each) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any section.

Unit-I

Scientific notation, Significant digits, Rounding off, Scientific notations, Sampling, Problem identification, Concept of population and samples, Random sampling, Data collection, Log, Indices, Design of experiments, differentiation and integration of trigonometric functions, inverse trigonometric functions, logarithmic functions and exponential functions, logarithmic differentiation & integration, results relating to the sum, difference, product and quotient of functions (without proofs).

Unit-II

Measurement of central tendency, mean, geometric mean, harmonic mean, Median, Mode, Quartile mean, decile, percentile, Dispersion, Mean deviation, Standard deviation, Standard error, Coefficient of variation, Variance, Coefficient of determinant, moments, skewness and kurtosis

Unit-III

Graphical representation of data, scattered diagram, Straight line, Least square test, Correlation coefficient, Regression coefficient, Correction of experimental data and model development

Unit-IV

Testing of hypothesis, null and alternate hypothesis, type-I, TYPE II errors, level of significance, Normal distribution, Binomial distribution, Student 't'-test, 'F'-test, chi-square test, analysis of variance (One-way and Two way ANOVA)

Text Books:

1. Kothari, C.R. (2004) Research Methodology Methods and Techniques, New Age International Publications, New Delhi
2. Arora, P.N. & Malhan, P.K. : Biostatistics (Himalaya Publication House)
3. Robert R. Sokal and F. James Rohlf Introduction to Biostatistics

Practicals:

1. Graphical representation of data (bar charts, line graphs)
2. Introduction to Statistical Computing
3. Computation of Descriptive Statistics
4. Paired samples t test, and One Way ANOVA,
5. Repeated Measures ANOVA
6. Fisher exact test
7. Computation of Correlation coefficient (Pearson, Spearman) and Linear Regression model
8. Performs unpaired t test, Weldh's t test (doesn't assume equal variances) and paired t
9. test