

Assistant Professor Name: Dr. Sudesh (2026-2027) odd semester

Class: B.A /B.SC(SKILL) -3 Sem **subject:** Statistics

Paper: Data Analysis Using R **Code:** 25STA403SE01

Week 1	Create different data objects: vectors, matrices, and data frames.
Week 2	Perform operations such as addition, subtraction, multiplication, transpose, and finding the inverse of matrices.
Week 3	Merge two or more data frames using different techniques.
Week 4	Identify and handle missing values.
Week 5	Identify and remove duplicate observations.
Week 6	Use Boolean operators in data manipulation.
Week 7	Write conditional statements using if and if else commands.
Week 8	Write custom functions in R.
Week 9	Implement for loops, repeat loops, and while loops for iterative tasks.
Week 10	Create histograms, boxplots, stem-and-leaf plots, scatter plots, and matplots.
Week 11	Generate multiple plots in a single graphic window.
Week 12	Calculate measures of central tendency (mean, median, mode) and dispersion (range, variance, standard deviation).
Week 13	Compute skewness and kurtosis, calculate covariance and correlation coefficients.
Week 14	Use distribution functions for various probability distributions. Fit curves to data and analyze the fit.
Week 15	Perform tests for normality (e.g., Shapiro-Wilk test).
Week 16	Conduct simple linear regression analysis.

Assistant Professor Name: Dr. Sudesh (2026-2027) odd semester

Class: B.A (minor) -5 Sem **subject:** Statistics

Paper: Bio-Statistics **Code:** 26STA405MV01

Month/week	Topic
August Week 3	Introduction to Bio-statistics, scope, significance and applications. Types of data: qualitative and quantitative; discrete and continuous variables
Week 4	Scale of measurement: nominal, ordinal, interval and ratio scaling techniques; Z-score, standard score and T-scores.
September Week 1	Reliability of test scores; methods including test-retest, parallel forms, split -half, and Cronbach alpha
Week 2	Measurement of disease occurrence through key morbidity indicators prevalence, incidence rate and cumulants incidence. And their applications in epidemiology and public health
Week 3	Discussion of limitations and potential biases measuring morbidity. Assessment of clinical agreement using statistical tools such as the kappa statistics, intra-class correlation coefficient
Week 4	Mantel- Haenszel test with emphasis on their interpretation and relevance in evaluating diagnostic consistency and research reliability
October Week 1	DIWALI BREAK
Week 2	Assessment of diagnostic and screening test with a focus on validity and reliability. Key measure of validity sensitivity, positive predictive value and negative value

Week 3	Reliability through consistency and repeatability of test, introduction to the receiver operating characteristic curve, Including its construction, interpretation and its applications
Week 4	Core concepts in epidemiology with a focus on association and causation. Association, Causation. Examination of potential errors in epidemiological studies, including bias, confounding.
November Week 1	effect modification, along with strategies for their identification and control.
Week 2	Methods for estimating risk and association, including relative risk, odds ratios, and attributable risk.
Week 3	Comparison of relative and attributable risks for evaluating disease burden and prevention potential.
Week 4	Use of odds ratios in retrospective studies and their approximation to prospective risk ratios. Exact inference techniques for odds ratio analysis in matched case-control studies.

LESSON PLAN (2026-27)

Major Course for UG Program

Teacher's name: Dr. Sandeep Kumar

Class: B.A./B.Sc. 1st Semester (Major)

Name of the course: Descriptive Statistics

August, 2026:
Week 2 (11-15 Aug): Meaning and Scope: Origin, development and definition of Statistics; importance and scope of Statistics.
Week 3 (17-22 Aug): Limitations and distrust of Statistics; Primary and Secondary Data; sources and methods of data collection.
Week 4 (24-29 Aug): Qualitative and Quantitative Data; Discrete and Continuous Data; Ungrouped and Grouped Data.
Week 5 (31 Aug-05 Sep): Scales of Measurement: Nominal, Ordinal, Interval and Ratio; Tabular and Graphical Presentation of Data.
September, 2026:
Week 1 (07-12 Sep): Measures of Central Tendency: Arithmetic Mean and Weighted Mean with examples and exercises.
Week 2 (14-19 Sep): Geometric Mean and Harmonic Mean; comparison, properties and applications.
Week 3 (21-26 Sep): Median and Mode; calculation for different series with examples and numerical exercises.
Week 4 (28 Sep-03 Oct): Characteristics of an Ideal Measure of Central Tendency; merits and demerits of various measures.
October, 2026:
Week 1 (05-10 Oct): Measures of Dispersion: Range and Inter-quartile Range with examples.
Week 2 (12-17 Oct): Quartile Deviation and Mean Deviation; numerical problems and interpretation.
Week 3 (19-24 Oct): Standard Deviation and Root Mean Square Deviation; properties and numerical exercises.
Week 4 (26-31 Oct): Coefficient of Variation; comparison of consistency; characteristics of an ideal measure of dispersion.
Diwali Vacation: 01.11.2026 - 09.11.2026
November, 2026:
Week 2 (10-14 Nov): Analysis and Consistency of Categorical Data; Independence and Association of Attributes.
Week 3 (16-21 Nov): Bi-variate Data: Scatter Diagram and Karl Pearson's Coefficient of Correlation.
Week 4 (23-28 Nov): Spearman's Rank Correlation Coefficient; Principle of Least Squares; fitting of Polynomials and Exponential Curves.
Week 5 (30 Nov-05 Dec): Linear Regression; Partial and Multiple Correlation (Three Variables Only) with examples and numerical exercises.
December, 2026:
Week 1 (06 Dec): Revision of complete syllabus: Units I-IV, important definitions, formulae, numerical problems and exam-oriented practice.

Teaching Terms: 1st Teaching Term: 11.08.2026 – 31.10.2026 2nd Teaching Term: 10.11.2026 – 06.12.2026

LESSON PLAN (2026-27)

Minor Course for UG Program

Teacher's name: Dr. Sandeep Kumar

Class: B.A. 3rd Semester (Minor)

Name of the course: Elementary Probability Theory

August, 2026:
Week 1 (11-15 Aug): Probability: Introduction, random experiment, sample space, events and algebra of events.
Week 2 (17-22 Aug): Definitions of Probability: Classical, Statistical and Axiomatic approaches with examples.
Week 3 (24-29 Aug): Conditional Probability; multiplication law of probability; independent events.
Week 4 (31 Aug-05 Sep): Laws of Addition and Multiplication; numerical exercises and applications.
September, 2026:
Week 1 (07-12 Sep): Theorem of Total Probability; statement, proof and numerical problems.
Week 2 (14-19 Sep): Bayes' Theorem and its applications; numerical examples.
Week 3 (21-26 Sep): Random Variables: discrete and continuous random variables; probability distribution function.
Week 4 (28 Sep-03 Oct): Probability Mass Function and Probability Density Function; properties and examples.
October, 2026:
Week 1 (05-10 Oct): Cumulative Distribution Function (CDF); illustrations and properties.
Week 2 (12-17 Oct): Two-dimensional random variables; joint, marginal and conditional distributions.
Week 3 (19-24 Oct): Mathematical Expectation: expectation of a single random variable and its properties.
Week 4 (26-31 Oct): Generating Functions: Probability Generating Function and Moment Generating Function.
Diwali Vacation: 01.11.2026 - 09.11.2026
November, 2026:
Week 1 (10-14 Nov): Characteristics and applications of Probability Generating Function and Moment Generating Function.
Week 2 (16-21 Nov): Discrete Probability Distributions: Bernoulli and Binomial distributions; properties.
Week 3 (23-28 Nov): Poisson and Geometric distributions; properties, limiting and approximation cases.
Week 4 (30 Nov-05 Dec): Continuous Probability Distributions: Uniform, Normal and Exponential distributions; properties and limiting/approximation cases.
December, 2026:
Week 1 (06 Dec): Comprehensive Revision: Units I-IV, important formulae, concepts, numerical problems and exam-oriented practice.

Teaching Terms: 1st Teaching Term: 11.08.2026 - 31.10.2026 2nd Teaching Term: 10.11.2026 - 06.12.2026

LESSON PLAN (2026-27)

Minor Course for UG Program

Teacher's name: Dr. Sandeep Kumar

Class: B.Sc. Mathematics (Hons.) 1st Semester

Name of the course: Introduction to Statistics

August, 2026:
Week 2: Statistics: Definition, scope and importance; statistical population and sample.
Week 3: Data: Quantitative and qualitative data; attributes; primary and secondary data; basic classification.
Week 4: Scales of measurement: Nominal, ordinal, interval and ratio; applications and examples.
Week 5: Presentation of data: Tabular and graphical presentation, including histogram and ogives.
September, 2026:
Week 1: Measures of central tendency: Mean, Median and Mode with examples and exercises.
Week 2: Measures of dispersion: Range, Quartile Deviation and Mean Deviation with examples.
Week 3: Standard Deviation and Coefficient of Variation; comparison of consistency with numerical problems.
Week 4: Moments, Skewness and Kurtosis; Box Plot with examples and exercises.
October, 2026:
Week 1: Bivariate data: Definition and Scatter Diagram; concept and types of correlation.
Week 2: Simple Correlation and Rank Correlation with examples and numerical exercises.
Week 3: Partial and Multiple Correlation (three variables only) with examples and exercises.
Week 4: Simple Linear Regression; regression equations and interpretation.
Week 5: Principle of Least Squares; fitting of Polynomial and Exponential Curves.
Diwali Vacation: 01.11.2026 - 09.11.2026
November, 2026:
Week 2: Attributes: Notations and Terminology; Contingency Table; Class Frequencies and Ultimate Class Frequencies.
Week 3: Consistency; Association and Independence of Attributes; Measure of Association for 2×2 Table.
Week 4: Chi-Square; Karl Pearson's and Tschuprow's Coefficients of Association; Contingency Tables with Ordered Categories.
Week 5: Revision of Units I-IV; important formulae, concepts, numerical problems and exam-oriented practice.
December, 2026: Final revision period continues up to 06.12.2026.

Teaching Terms: 1st Teaching Term: 11.08.2026 – 31.10.2026 2nd Teaching Term: 10.11.2026 – 06.12.2026

LESSON PLAN (2026-27)**Teacher's name: Dr. Permila****Name of the course: Statistical Inference****Minor Course for UG Program****Class: B.Sc. Maths (Hons.) 3rd Semester**

August, 2026:
Week 2: Population, Sample, Parameter, Statistic, Standard Error
Week 3: Central Limit Theorem
Week 4: Distribution: Student's t-Distribution
Week 5: F –Distribution
September, 2026:
Week 1: χ^2 Distribution: Definitions, Properties and Their
Week 2: Estimator, Criteria of a Good Estimator. Neyman's Factorization Theorem
Week 3: Methods of Estimation of Parameters by the Method of Moments
Week 4: Least-Square and Maximum Likelihood, Properties of MLE's
October, 2026:
Week 1: Estimation of Parameters Binomial, Poisson & Normal Distributions.
Week 2: Concepts of Statistical Hypothesis, Null and Alternative Hypotheses, Critical Region, Type of Errors,
Week 3: 3Level of Significance and Power of the Test, One and Two Tailed Tests.
Week 4: Large Sample Test and Confidence Interval for Single Mean, Difference of Two Means
Week 5: Difference of Proportions, Standard Deviation and Correlation Coefficient.
Diwali Vacation: 01.11.2026 – 09.11.2026
November, 2026:
Week 2: Small Sample Test and Confidence Interval for Single Mean
Week 3: Difference of Means and Paired Sample
Week 4: χ^2 -Test for Goodness of Fit and Independence of Attributes
Week 5: F-Test for Equality of Variances.

LESSON PLAN (2026-27)**Major Course for UG Program****Teacher's name: Dr. Permila****Class: B.Sc./B.A. Vth Semester****Name of the paper: Applied Statistics**

August, 2026:
Week 2: Time Series: Definition and Components
Week 3: Trend Measurement by Mathematical Curves: Polynomial
Week 4: Growth Curves
Week 5: Moving Average Method, Spencer's Formulae
September, 2026:
Week 1: ., Effect of Elimination of Trend on Other Components of Time Series.
Week 2: Variate Difference Method and Its Use for Estimation of Variance of the Random Component.
Week 3: Measurement of Seasonal Fluctuations, Measurement of Cyclical Component; Periodogram Analysis.
Week 4: Concept of Stationary Time Series, Strong and Weak Stationarity:
October, 2026:
Week 1: Auto-covariance and Auto- correlation.
Week 2: Augmented Dickey-Fuller Test, Correlogram for Auto Regressive & Moving Average Models, Box-Jenkin's Models, Estimation of Parameters in ARIMA Models.
Week 3: Statistical Quality Control: Purposes, 3-Sigma Control Limits, Shewart's Control Charts for Variables.
Week 4: Natural Tolerance, Specification and Modified Control Limits. Sampling Inspection Plan.
Week 5: Diwali Vacation: 01.11.2026 – 09.11.2026
November, 2026:
Week 2: Producer's and Consumer's Risk, OC
Week 3: and ASN Function, AQL, LTPD and ATI.
Week 4: :Single, Double & Sequential Sampling Plans with AOQ, OC, ASN and ATI Curves.
Week 5: Choice of Sampling Plans by Attributes and Variables (Known and Unknown Sigma Case).

Assistant Professor Name: Dr. Jyoti (2026-2027) odd semester

Class: B.sc/B.A -3rd Sem. **subject:** Statistics

Paper code : sampling techniques **Code:** 25STAS403DS01

Week 1	Concept of census and sampling surveys: basic concept of sampling, sampling and non- sampling error.
Week 2	Principal steps involved in a sample survey, Bias, Precision, accuracy and mean squared error.
Week 3	Imitation of sampling,Bias principle of sampling survey, types of sampling, selection of a simple random sample.
Week 4	Lottery and random number methods
Week 5	Simple random sampling with and without replacement, estimation in simple random sampling.
Week 6	Merits and demerits of SRS, estimation of population proportion for attributes.
Week 7	Determination of sample size in SRS, ratio and regression estimator.
Week 8	Use of Auxiliary information, ratio estimator,Bias of ratio estimator, unbiased ratio type estimator.
Week 9	Resignation estimated bias in the linear equation estimator,Double sampling.
Week 10	Stratified random sampling, principal advantages of stratified random sampling, allocation of sample size.
Week 11	Optimum allocation, cost function, relative precision between precision between stratified random and simple random sampling.
Week 12	Systematic sampling linear and circular.
Week 13	Advantages of systematic sampling over simple random sampling cluster sampling.
Week 14	Single stage, two Stage, principal advantages of two States sampling.
Week 15	Estimation of population i mean and variance, comparison of two

	States sampling with single stage sampling.
Week 16	Revision

Assistant Professor Name: Dr. Jyoti (2026-2027) odd semester

Class: B.SC life science(SKILL) -3rd Sem. **subject:** Statistics

Paper code : statistical computing using SPSS **Code:** 25STAX03MD01

Week 1	Presentation of the data through different graph
Week 2	Compute the measurement of central tendency and dispersion for a dataset.
Week 3	Determine the correlation coefficient.
Week 4	Determine the spearman's rank correlation.
Week 5	Check the independence and association of attributes.
Week 6	Check the consistency of categorical data.
Week 7	Perform small sample tests.
Week 8	Perform large sample tests.
Week 9	Find confidence interval to estimate the parameters.
Week 10	Perform one- way and two-way ANOVA.
Week 11	Find the best fitted line using the method of curve fitting.
Week 12	Fit the simple linear regression and assess the significance of obtained model.
Week 13	Practice
Week 14	Practice
Week 15	Revision
Week 16	Revision

Assistant Professor Name: Dr. Jyoti (2026-2027) odd semester

Class: B.sc. life science -1st Sem. **subject:** Statistics

Paper code : Basic statistics **Code:** 24STAX01MD01

Week 1	Statistics: definition, scope and limitations.
Week 2	Concept of statistical population and sample. Data quantitative and qualitative.
Week 3	Methods of collection, scale of measurement: nominal, ordinal, interval and ratio.
Week 4	Tabular and graphical representations of data: classification, tabulation, diagrammatic representation using bar graph.
Week 5	Line graph, dot plot, pie chart.
Week 6	Pareto chart, histogram, frequency polygon, ogives.
Week 7	Stem and leaf plot and scatter plot.
Week 8	Measures of central tendency: mathematical and positional.
Week 9	Measures of dispersion: Range, Quartile deviation.
Week 10	Mean deviation, standard deviations.
Week 11	Coefficient of variation, moments, skewness, kurtosis.
Week 12	Analyseis and consistency of categorical data.
Week 13	Independence and association of attributes.
Week 14	Bivariate Data: definition,scatter diagram.
Week 15	Simple, partial and multiple correlation (3 variables only). Rank correlation simple linear regression.
Week 16	Rank correlation ,simple linear equation

Assistant Professor Name: Dr. Jyoti (2026-2027) odd semester

Class: B.A /B.SC(SKILL) -1st Sem. **subject:** Statistics

Paper: Data Analysis Using excel and SPSS **Code:** 24STA401SE01

Week 1	Practice navigating through different types and using common commands.
Week 2	Practice importing and exporting data from to different formats.
Week 3	Using the concatenate function to combine text from different cells, use if function for logical operation.
Week 4	Use VLOOKUP and HLOOKUP for data retrieval, use count and count if for counting cells based on criteria.
Week 5	Use text and trim function for text manipulation, creating and customizing pivot table.
Week 6	Analysing data using pivot tables, using power query for advanced data transformation.
Week 7	Use SPSS syntax for data transformation.
Week 8	Generate frequency table and crosstabs in Excel and spss.
Week 9	Creating Bar chart, line charts and histograms in excel and SPSS.
Week 10	Constructing pie charts, frequency polygons, graphs and box plots in excel and SPSS.
Week 11	Compute the measure of Central tendency and dispersion of a data set using excel and SPSS.
Week 12	Check the independence and association of two attributes.
Week 13	Bivariate data: scatter diagram, plotting and interpretation.
Week 14	Calculation of product moment correlation coefficient, correlation ratio, rank correlation.
Week 15	Fitting of regression lines by least squares.
Week 16	Revision