LESSON PLAN (2024-25) (Statistics)(Odd Sem)
Multidisciplinary Course for UG (Sem I)

Teacher's name: Dr. Sudesh & Dr. Permila
Name of the course- Basic Statistics

July:
Week 4
Statistics: Definition, scope & limitation ,concept of statistical data: Quantitative and Qualitative, methods of collection.
August:
week 1
Scales of measurements: nominal, ordinal, interval and ratio, Tabular and Graphical Representation of data: Classification , tabulation, diagrammatic representation using Bar graph, line graph with examples.
Week 2
Pie chart, Histogram, Frequency polygon, Ogives, Stem and Leaf Plot with examples
Week 3
Box plot and Whisker plot and scatter plot with examples
Week 4
Measure of central Tendency: Mathematical and positional measure of dispersion with examples
September:
Week 1
Range, Quartile deviation, mean deviation with examples
Week 2
Coefficient of variation , Moments with examples and exercise
Week 3
Skewness and Kurtosis with examples
Week 4
Analysis and consistency of categorical data
October:
week 1
Independence and Association of Attributes
Week 2
Bivariate Data; Definition ,Scatter diagram
Week 3
Simple, Partial correlation

Week 4
Multiple correlation three variables only
November:
Week 1
DIWALI HOLIDAY
Week 2
Rank correlation examples and exercise
Week 3
Simple linear Regression with examples and problems

LESSON PLAN (2024-25)(Statistics)(Sem I)
Minor Course for UG Program

Teacher's name: Dr. Sudesh ,Dr. Permila & Dr. Sandeep
Name of the course: Introduction to statistics

July:
Week 4
Statistics: Definition, scope & limitation ,concept of statistical data: Quantitative and Qualitative, methods of collection.
August:
week 1
Scales of measurements: nominal, ordinal, interval and ratio
Week 2
Presentation: Tabular and Graphical including Histogram and ogives
Week 3
Measure of central Tendency: Mean, Median, Mode
Week 4
Mathematical and positional measure of dispersion with examples
September:
Week 1
Range, Quartile deviation, mean deviation with examples
Week 2
Coefficient of variation , Moments with examples and exercise
Week 3
Skewness and Kurtosis with examples
Week 4
Independence and Association of Attributes,independence
October:
week 1
Measure of association for 2*2 table chi-square, karlpearson
Week 2
Bivariate Data; Definition ,Scatter diagram
Week 3
Simple, Partial correlation

Week 4
Multiple correlation three variables only
November:
Week 1
DIWALI HOLIDAY
Week 2
Rank correlation examples and exercise
Week 3
Simple linear Regression with examples and problems

LESSON PLAN (2024-25)(Statistics)
Major Course for UG Program

Teacher's name: Dr. Sandeep Kumar
Name of the course: Descriptive Statistics
Class: B.A/B.Sc 1st sem

July:
Week 4
Meaning and scope: origin, development and definition of statistics
August:
week 1
Importance and scope of statistics, Limitations and distrust of statistics .Data : Primary and Secondary Data.
Week 2
Qualitive and quantitative data, discrete and continuous data,ungrouped and grouped data
Week 3
Scales of measurement normal,ordinal,interval and Ratio, tabular and Graphical presentation of Data
Week 4
Measure of central tendency: Arithmetic mean,weighted mean, Geometric mean
September:
Week 1
Harmonic mean ,Median and Mode.
Week 2
Characteristics for an Ideal Measure of central tendency, merit and demerit of major of Central tendency
Week 3
Major of Dispersion:Range ,Inter-quartile Range, Quartile Deviation
Week 4
Mean deviation and standard deviation
October:
week 1
Root Mean square Deviation , coefficient of variation
Week 2
Measure of Skewness and Kurtosis ,characteristics for an ideal Measure of Dispersion

Week 3
Analysis and Consistency of categorical Data, independence and association of attributes
Week 4
Bi-variate data: Scatter Diagram,Karl Pearson's Coefficient of Correlation
November:
Week 1
DIWALI HOLIDAY
Week 2
Spearman's Rank Correlation coefficient, Principle of Least Squares Fitting of polynomial and exponential curves
Week 3
Linear regression,Partial and Multiple Correlation

LESSON PLAN (2024-25)

Teacher's name: Dr. Sandeep Kumar

Name of the course: Operation Research

Class: B.sc Math hons 5th sem

July:
Week 4
Definition,scope, methodology and application of OR.Types of OR models
August:
week 1
Concept of optimization.Linear programming: introduction
Week 2
Formulation of a linear programming problem, requirements for an LPP
Week 3
Advantages and limitations of LP, graphical solution: multiple, unbounded and infeasible solutions
Week 4
Principle of simplex method , standard form, basic solution
September:
Week 1
Basic feasible solution.computational aspect of simplex method: cases of unique feasible solution
Week 2
No feasible solution, multiple solution and unbounded solution and degeneracy
Week 3
Two Phase and Big M method.Duality in LPP
Week 4
Transportation problem: Methods for finding basic feasible solution of a transportation problem
October:
week 1
Modified distribution method for finding the optimum solution
Week 2
Unbalanced and degenerate transportation problem ,transhipment problem

Week 3
Maximization in a transportation problem.Assignement Problem: Solution by Hungarian method, unbalanced assignment problem
Week 4
Maximization in an assignment problem,Crew assignment and travelling salesman
November:
Week 1
DIWALI HOLIDAY
Week 2
Game Theory: Two person zero sum game ,game with saddle points
Week 3
The rule of dominance: Algebraic, graphical and linear programming methods for solving mixed strategy games

LESSON PLAN (2024-25)

B.Sc III (Statistics), Semester-V

Paper name: Numerical Methods & Fundamentals of Computers, Applied Statistics

Teacher's name: Dr. Permila & Dr. Jyoti

July Week 4
Numerical Methods: Difference Tables, Newton's Interpolation Formulae with Equal and Unequal Intervals. Lagrange's Method of Interpolation.
July Week 5 /August Week 1
Numerical Integration, General Quadrature Formula for Equidistant Ordinates. Trapezoidal Rule, Simpson's One-Third and Three-Eight Formula. Basic of Computer: Introduction.
Week 2
Origin, Development, Uses and Limitation of Computers. Types of Computers, Computer Structure.
Week 3
Input-Unit, CPU, Output Unit, Secondary Storage, High Level and Low Level Languages, Compiler and Interpreter.
Week 4
Computer Arithmetic: Floating Point Representation of Numbers, Arithmetic Operations with Normalized Floating Point Numbers. Number Systems- Binary.
Week 5
Decimal, Octal and Hexadecimal Number Systems and their Conversions into each other. Binary Arithmetic's, (Addition, Subtraction, Multiplication & Division).
September Week 1
Flow Charts and Algorithm: Concepts of Flow Chart and Algorithm. Flow Charts and Algorithms for the following: Mean
Week 2
Standard Deviation, Coefficient of Correlation, Straight Line Fitting. Analysis of Data using MS Excel.
Week 3
Index Number: Definition, Problems involved in the Construction of Index Numbers, Calculation of Index Numbers-Simple Aggregate Method, Weighted Aggregates Method.
Week 4
Simple average of Price Relatives, Weighted Average of Price Relatives, Link Relatives, Chain Indices. Value Index Numbers, Price and Quantity Index Numbers, Laspeyre's, Paasche's, Marshall-Edgeworth and Fisher's Index Numbers.
Week 5 / October Week 1
Time and Factor Reversal Tests of Index Numbers, Consumer Price Index Number and Its uses.

Base Shifting, Splicing and Deflating of Index Numbers.
Week 2
Time Series Analysis: Definition, Components of Time Series-Trend, Seasonal Variations, Cyclic Variations, Irregular Component
Week 3
Additive and Multiplicative Models, Determination of Trend-Graphic Method. Semi-Averages Method, Method of Curve fitting by Principle of Least Squares, Growth Curves and their Fitting, Moving Average Method.
Week 4
Analysis of Seasonal Fluctuations, Construction of Seasonal Indices using Method of Simple Averages, Ratio to Trend Method
November Week 2
Ratio to Moving Average Method and Link Relative Method, Demographic Methods: Sources of Demographic Data-Census, Register.
Week 3
Adhoc Survey, Hospital Records. Measurement of Mortality- Crude Death Rate,Specific Death Rate, Standardized Death Rates. Complete Life Tables and its main Features, Assumptions, Descriptions and Construction of Life Tables, uses of Life Tables.
Week 4
Abridged Life Table using King's Method, Stationary and Stable Population. Measurement of Fertility-Crude Birth Rate, General Fertility Rate, Specific Fertility Rate, Total Fertility Rate. Measurement of Population Growth-Gross Reproduction Rate, Net Reproduction Rate.

LESSON PLAN (2024-25) (Statistics)(Odd Sem)

Teacher's name: Dr. Joyti

Name of the course- Elementary Inference

July:
Week 4 Generating Function, Moment Generating Functions.
August:
week 1
Cumulate Generating function alone with there properties & uses.
Week 2
Tchebychevs inequality, convergence in probability, weak & strong laws of large numbers (Statement Only)
Week 3
Bernoulli distribution, binomial distribution, and their characteristics with examples.
Week 4
Poisson distribution and its application with examples.
September:
Week 1
Geometric distribution and its properties with examples.
Week 2
Hypergeometric distribution with its property with examples
Week 3
Continuous distributions: - Uniform, Gamma distributions with their properties.
Week 4
Beta distributions (first and second kind)
October:
week 1
Exponential distribution with its properties and application with examples.
Week 2
Exponential distribution with its properties and application with examples.
Week 3
Normal distribution with its properties.

Week 4
Examples and applications of Normal distribution and its comparison with other distributions.
November:
Week 1
DIWALI HOLIDAY
Week 2
Some important example of Normal distribution and its real-life applications.
Week 3
Central limit theorem and its applications.

LESSON PLAN (2024-25)

Teacher's name: Dr. Sudesh,Dr. Jyoti
Class and Section: BSc II(Sem III)
Subject : Statistics
Paper : Sample Surveys and Elementary Inference

July:
Week 4
Concepts of census, Sample survey, Basic concepts in sampling, Sampling errors, Non sampling errors
August:
week 1
Principal steps involved in a sample survey.
Week 2
Accuracy and mean squared errors, Some basic sampling methods, Simple random sampling (SRS) with replacement, Simple random sampling without replacement, TEST.
Week 3
Use of random number tables, Estimator of mean.
Week 4
Estimator of its variance in case of simple random sampling, Estimators of proportions, Estimators of ratios.
September:
Week 1
Stratified random sampling, Estimation of population mean, Test.
Week 2
Variance of the estimate of population mean of stratified random sampling, Allocation of sample size, Proportional allocation, Optimum allocation, Comparison of stratified random sampling with simple random sampling.
Week 3
Systematic random sampling, Its various results about variance. Statistical estimation : Parameter and statistic, Sampling distribution of statistic, Point estimate of a parameter.
Week 4
Concept of bias and standard error of an estimate, Standard errors of sample mean, Sample proportion, Standard deviation, Characteristics of good estimator.
October:
week 1
Unbiasedness, Efficiency, Sufficiency, Methods of Estimation, Method of moments. Method of

maximum likelihood.
Week 2
Testing of Hypotheses, Null hypotheses, Alternative hypotheses, Simple and composite hypotheses, Critical region.
Week 3
Level of significance, one tailed testing, two tailed testing, types of errors , Assignment.
Week 4
Neyman-Person lemma, Test of simple Hypothesis against a simple alternative in case of binomial.
November:
Week 1
Poisson & Normal Distribution, Large sample test, testing & Interval estimation of a single mean, a single proportion, difference of two means of two proportion fisher's Z transformation.
Week 2
Sampling example, Sampling bases numericals, comparison of hypothesis.
Week 3
Numerical on large sample test, numerical errors comparison, Problem.