



Shikshan Prasarak Sanstha`s
Padmabhushan Vasanttraodada Patil Mahavidyalaya, Kavathe Mahankal
DEPARTMENT OF STATISTICS

Course outcomes (CO's)

Course 1: Descriptive Statistics I

At the end of this course students will be able to,

CO1.1: Know meaning and scope of statistics in various fields and to know various types of data.

CO1.2: Evaluate summary measures, to know concept of attribute, independence and association.

Course 2: Elementary Probability Theory

At the end of this course students will be able to,

CO2.1: Explain random and non random experiments and compute probabilities of various events.

CO2.2: Explain concept of independence, conditional probabilities and apply Baye's theorem.

Course 3: Descriptive Statistics II

At the end of this course students will be able to,

CO3.1: Compute index numbers by various methods.

CO3.2: Know the concept of correlation and regression and it's applications.

Course 4: Discrete Probability Distributions

At the end of this course students will be able to,

CO4.1: Know probability models for discrete random variables, concept of Skewness and kurtosis.

CO4.2: Know some standard discrete probability distributions, the concept of Bivariate distributions.

Course 5: Practical I

At the end of this course students will be able to,

CO5.1: Represent statistical data diagrammatically and graphically.

CO5.2: Compute measures of central tendency, dispersion, correlation and regression coefficients.

CO5.3: Explain the concept of consistency, association and independence of attributes and compute index numbers.

CO5.4: Know applications of some standard discrete probability distributions.

Course 6: Probability Distributions – I

At the end of this course students will be able to,

CO6.1: Understand the concept of discrete and continuous distributions and evaluate probabilities.

CO6.2: Derive the probability distributions of transformed univariate and bivariate continuous r.v's

Course 7: Statistical Methods I

At the end of this course students will be able to,

CO7.1: Fit multiple linear regression and to compute multiple and partial correlation coefficients.

CO7.2: Know the concept of sampling, vital statistics, mortality, fertility and growth rates.

Course 8: Probability Distributions – II

At the end of this course students will be able to,

CO8.1: Know various continuous probability distributions and to evaluate the various measures.

CO8.2: Understand Chi-square, t and F distributions and inter relations among them.

Course 9: Statistical Methods II

At the end of this course students will be able to,

CO9.1: know the concept of time series, SQC and to construct various control charts.

CO9.2: Understand the basic terms in testing of hypothesis and apply the large and small sample tests.

Course 10: Practical II& Practical III

At the end of this course students will be able to,

CO10.1: Compute probabilities of standard probability distributions, expected frequencies and test for goodness of fit also to draw random samples by various sampling methods

CO10.2: Fit plane of regression and to compute multiple and partial correlation coefficients.

CO10.3: Construct various control charts and to decide the state of production process.

CO10.4: Apply the large and small sample tests in various hypothesis testing problem.

Course 11: Probability Distributions

At the end of this course students will be able to,

CO11.1: Understand Laplace, Cauchy, Lognormal, Weibull, Logistic, Pareto and Power Series distributions with their applications and inter relations.

CO11.2: Know Multinomial distribution, Bivariate Normal distribution and Truncated Distributions.

Course 12: Statistical Inference I

At the end of this course students will be able to,

CO12.1: Understand the basic concepts in statistical inference and important properties of estimator.

CO12.2: Obtain estimate of the parameters using MLE and know the inference of parameters of standard discrete and continuous distributions.

Course 13: Design of Experiments

At the end of this course students will be able to,

CO13.1: Know the basic concepts and principles in design of experiments and to know ANOVA table.

CO13.2: Design and analyze CRD, RBD and LSD also the factorial experiments with confounding.

Course 14: R Programming and Quality Management At the end of this course students will be able to,

CO14.1: Acquire the knowledge of identifiers, operators, conditional statements, loops used in R, write simple programs to compute various statistical measures.

CO14.2: Acquire the knowledge of quality tools and to know the concept of process and product control used in Quality management.

Course 15: Probability Theory and Applications

At the end of this course students will be able to,

- CO15.1: Know the Chebychev's inequality and to understand the concept of order statistics and its applications.
- CO15.2: Know the various modes of convergence of sequence of random variables and the concept of reliability also to compute reliability of various systems.

Course 16: Statistical Inference II

At the end of this course students will be able to,

- CO16.1: Obtain and interpret interval estimates of population parameters.
- CO16.2: Differentiate between parametric and nonparametric tests, to develop parametric and non parametric tests for various hypothesis testing problems.

Course 17: Sampling Theory

At the end of this course students will be able to,

- CO17.1: Select and implement appropriate probabilistic sampling scheme and to estimate desired population parameters based on SRS, Stratified Sampling, Systematic sampling and Cluster Sampling.
- CO17.2: Compare various sampling techniques and utilize auxiliary information in survey by means of Ratio and Regression method of estimation.

Course 18: Operations Research

At the end of this course students will be able to,

- CO18.1: Formulate a problem as a LPP and to obtain its solution of LPP by different methods.
- CO18.2: Obtain the solution of transportation, assignment and sequencing problems, to apply the simulation techniques.

Course 19: Practical IV, V, VI & VII

At the end of this course students will be able to,

- CO19.1: Compute probabilities of standard probability distributions, test for goodness of fit and to draw random samples by various sampling methods.
- CO19.2: Determine the parameters and probabilities for multinomial and bivariate normal distribution.
- CO19.3: Estimate the various parameters by point and interval estimation method.
- CO19.4: Test various hypothesis by using parametric and non-parametric tests based on observed data.
- CO19.5: Analyze the CRD, RBD, LSD also factorial and confounded designs.
- CO19.6: Determine sample size in SRS for variables and attributes and to obtain the estimators of population parameters.
- CO19.7: Develop R code for specific task, formulate LPP and obtain the solution by different methods.
- CO19.8: Construct the control charts and study the state of production process.