FATIMACOLLEGE(AUTONOMOUS),MADURAI–625018
COURSEOUTCOMES

NAMEOFTHEPROGRAMME:B.Sc. STATISTICS

PROGRAMMECODE:USST

COURSECODE	COURSETITLE	COURSEOUTCOMES
19ST1CC1	Basic Statistics	CO1.Recognizes investigation, investigator, enumerator and enumeration and explain different methods of data collection. CO2. Identifies the need of Classification and Tabulation CO3. Construct and analyze graphical display to summarize data. CO4. Explain and evaluates various measure of central tendency CO5. Compute and interpret measure of centre and spread of data
19ST1CC2	Probability Theory	CO1. Identify from a probability scenario events that are simple, complementary, mutually exclusive, and independent CO2. Recognize multiplication rule for two independent events, the addition rule for union of two events, and the complement rule. CO3. Describe the main properties of probability distribution and random variables. CO4. Construct discrete and continuous random variables CO5. Apply general properties of the expectation and variance operators

19ST1AC1	Calculus	CO1. Explain higher derivatives and apply Leibnitz theorem to find the nth derivative of functions CO2. Explain multiple points, Envelopes, nodes and conjugate points CO3. Construct reduction formula for trigonometric functions. CO4. Define Jacobian, double & triple integrals and apply the knowledge ofchange of variables to solve the problems in double and triple integrals. CO5. Construct Fourier series by recalling integration.
19ST2CC3	Descriptive Statistics	CO1. Evaluates and interprets the nature of skewness and kurtosis CO2. Identify the direction and strength of a correlation between two factors. CO3. Compute and interpret the spearman correlation coefficient. CO4. Calculate and interpret the coefficient of determination. CO5. Recognize regression analysis applications for purpose of description and prediction.
19ST2CC4	Discrete Probability Distribution	CO1. Recognize cases where the Binomial distribution could be an appropriate model. CO2. Able to apply the Poisson distribution to a variety of problems. CO3. Explore the key properties such as the moment generating function, cumulant of a negative binomial distribution. CO4. Understand and derive the formula for the geometric and hyper geometric probability mass function.
19ST2AC2	Algebra	CO1. Define binomial series, logarithmic and exponential series and solve

		problems.
		CO2. Identify relations between the roots and co-efficients of equations.
		CO3. Explain the transformations of equations.
		CO4. Recognize the important methods in finding roots of the given polynomial.
		CO5. Solve algebraic equations using Newton's method and Horner's method.
19ST1NME / 19ST2NME	Fundamental of Statistics	CO1. Summarize the origin of statistics and its relation with other disciplines.
		CO2. Identify the method of collecting the statistical data.
		CO3. Classify the primary and secondary data.
		CO4. Find the mean, median and mode for the given distribution and analyse.
		CO5. Explain the various measures of dispersion and analyse.
19ST3CC5	Distribution Theory - II	CO1. Recognize cases where the normal distribution could be an appropriate.
		CO2. Understand and derive the moments, moment generating functions, characteristic functions of rectangular, beta and gamma distribution.
		CO3. Explore the key properties such as the moment generating function and cumulants of exponential and Cauchy distribution
		CO4. Recall the definition of a t statistic in terms of statistics of a sample from a normal distribution
		CO5. State and apply the definitions of the t, F and Chisquare distributions in terms of the standard normal.
19ST3CC6	Sampling Theory	CO1. Illustrate census and sampling and their advantages and disadvantages.

		CO2. Recognizes probability and non-probability sampling
		CO3. Identifies sampling and non-sampling errors.
		CO4. Differentiates the SRSWOR, SRSWR, methods of SRS – lottery method and random number table method.
		CO5. Describes different kinds of sampling – simple random sampling, systematic sampling, stratified sampling and cluster sampling.
19ST3AC3	Linear Programming	CO1. Formulate linear programming problems and solve by graphical method.
		CO2. Classify simplex, two phase and Big - M method to solve linear programming problems.
		CO3. Illustrate Duality in Linear programming
		CO4. Recognize and formulate transportation, assignment problems and find the optimal solution
19ST3SB1	Practical Statistics - I	CO1. Calculate measure of central tendency, measure of dispersion, skewness and kurtosis.
		CO2. Compute correlation, regression and measures of association of attributes.
19ST4CC7	Statistical Inference - I	CO1. Describe how to estimate population parameters with consideration of error
		CO2. Compute a point estimate of the population mean
		CO3. Interpret a confidence interval and confidence level
		CO4. Conduct inference about the difference in the means of two Normal distributions, including cases where the underlying variances are known or

		unknown.
19ST4CC8	Applied statistics	CO1. Construct curve fitting.
		CO2. Define and explain analysis of time series and index numbers.
		CO3. Classify interpolation and extrapolation
		CO4. Evaluate birth, death rate, infant mortality and neo natal mortality rate.
19ST4AC4	Linear Algebra	CO1. Define Vector Space and explain its various concepts
		CO2. Illustrate Inner Product Spaces
		CO3. Define basic concepts of matrices and solve linear equations
		CO4. Appraise Eigen Value and Eigen Vectors of matrices
		CO5. Describe bilinear forms and quadratic forms
19ST4SB2	Practical Statistics - II	CO1. Interpret the fitting of discrete and continuous distributions.
		CO2. Calculate the sampling distributions for large and small samples.