Programme Outcome, Programme Specific Outcome & Course Outcome of



DEPARTMENT OF STATISTICS,

GOALPARA COLLEGE, GOALPARA, ASSAM

B.SC IN STATISTICS – PROGRAMME OUTCOME DEPARTMENT OF STATISTICS GOALPARA COLLEGE, GOALPARA, ASSAM.

The B.Sc in Statistics Honours program in the undergraduate course has the following outcomes...

The students gather knowledge about the history and origin of Statistics.

Students will learn about Descriptive Statistics, Probability and it's Distributions, Statistical Quality Control, Design of Experiments, Correlation and Regression, Queuing Theory, Stochastic Process, Calculas, Algebra, Sampling technique used in Surveys, Excel, SPSS, C, C++ And R etc.

Students are not only statistically sound but also capable of using their proper statistical skills in multidisciplinary areas such as industry, Telecommunication, Bio-Statistics, Business, Medical science etc. As a result, the students can pursue their future career either in the core field or in the applied areas of statistics.

Planning, Execution of statistical investigations, analysis and interpretation of collected data using appropriate methods, including software and programming languages and report of the findings of the investigation.

Recognize the importance of statistical modelling and computing and role of approximation.

B.SC STATISTICS - COURSE OUTCOME

DEPARTMENT OF STATISTICS

GOALPARA COLLEGE, GOALPARA, ASSAM.

SEMESTER	PAPER CODE	COURSE NAME	COURSE OUTCOME	UNIT	BLOOM'S TAXONOMY LEVEL
Ι	STA- HC-1016	Descriptive Statistics	 Understand the basic knowledge of statistics such as collection, tabulation, comparison and presentation of data. Find out the variation and the relationship among the variables. Acquire Knowledge about wholesale Index numbers, cost of living index number, and calculation of Dearness Allowance. 	 Statistical Methods Measures of Central Tendency Bivariate Data Index Numbers 	Remember, Apply, Evaluate, Analyze, Understand.
	STA- HC-1026	Calculus	 Explain the relationship between the derivatives of a function and the nature of the derivatives as the slope of the Tangent line to a function at a point. Acquire different techniques of solving various problems of engineering and science stream. Distinguish between linear, Non Linear, partial ordinary differential equations. 	 Differential Calculus Integral Calculus Differential equations Partial Differential Equation 	Remember, Evaluate, Understand.

Π	STA- HC-2016	Probability And Probability Distributions	 Understand the probability theories and probability distributions for discrete and continuous random variables along with pmf, pdf, distribution functions and characteristics function etc. Understand the marginal and conditional probabilities and covariance of two random variables. Derive the probability distributions of random variables. 	 Probability Random variables Mathematical Expectations and Generating Functions. Probability Distributions and Generating functions 	Remember, Evaluate, Understand.
	STA- HC-2026	Algebra	 Understand the technique of the solution of various types of equations like quadratic, cubic etc. Acquire knowledge about different types of Matrices, adjoin and inverse of a matrix, solution of set of linear equations through matrices, rank of a matrix, characteristic roots and characteristic vectors and their properties, quadratic forms. 	 Theory of equations Algebra of Matrices Determinants of Matrices. Matrices 	Remember, Apply, Evaluate, Analyze.
	STA- HC-3016	Sampling Distributions	1. Understand the concept of sample, population, parameter, statistics, distribution of a statistics, hypothesis, Type I and Type II Errors etc.	1.Order Statistics	Remember, Apply, Evaluate, Analyze,

III			2. Acquire knowledge about Chi-Square distribution, t- distribution, f-distribution and their properties and applications in different fields.	 2. Sampling Distributions 3. Exact Sampling Distribution 4. Sampling Distribution 	Understand.
	STA- HC-3026	Survey Sampling & Indian Official Statistics	 Have idea about different sampling techniques of drawing samples from a population. Use of simple random sampling with and without replacement, stratified random sampling, systematic sampling, cluster sampling etc. Acquire the knowledge about the role of MoSPI, CSO, NSSO and National Statistical Commission. 	 1.Survey Sampling 2.Stratified random Sampling 3. Ratio and Regression method of Sampling 4. Official Statistics 	Remember, Analyze, Understand.
	STA- HC-3036	Mathematical Analysis	 Understand real numbers, different types of sets, principle of convergence, monotonic sequence. Acquire knowledge about the infinite series, limit, continuity and differentiability of a function, application of mean value theorem, Taylor's theorem. Have an idea about the application of different formulae of interpolation, central differences, numerical integration, and solution of difference equations. 	 Real analysis Infinite series Limits, Continuity and Differentiability Numerical Analysis 	Remembe, Evaluate, Understand.

	STA- HC-4016	Statistical Inference	 Understand the concept of estimation through unbiased, sufficiency, consistency and efficiency. Methods of estimation, principle of test os significance, sequential probability ratio test. 	 Estimation Methods of Estimation Principles of Test of Significance Principles of Test of Significance 	Remember, Apply, Evaluate, Analyze, Understand.
IV	STA- HC-4026	Linear Models	 Knowledge of least square method, Gauss-Markov theorem, regression analysis, concept of fixed, random and mixed effect model. Analysis of variance and covariance in one way and two way classified data for fixed effect model, prediction of fitted model. 	 Gauss Markov Set up Regression Analysis Analysis of variance Model checking 	Remember, Analyze, Understand, Create
	STA- HC-4036	Statistical Quality Control	 Basic knowledge of statistical process control, different types of control charts like mean and range chart, s- chart, np-chart, c-chart and u-chart. Knowledge of single and double acceptance sampling plan, concept of six-sigma limits. 	 Statistical Process Control Control Charts for Variables Acceptance Sampling Plan. Six- Sigma 	Apply, Evaluate, Analyze.

V	STA- HC-5016	Stochastic Process and Queuing Theory	 Concept of probability generating function, stochastic process, stationary process. Markov chain and its order, transition probability, classification of state. Knowledge of Poisson process and its properties, Queuing system. 	 Probability Distributions Markov Chains Poisson Process Queuing System 	Apply, Evaluate, Analyze, Understand.
	STA- HC-5026	Statistical Computing Using C/C++ programming	 Basic knowledge of different oprators and expressions used in C/C++ programming. LOOPS and arrays used in programming. 	 C Programming Decision Making and Arrays 	Analyze, Apply and Create
VI	STA- HC-6016	Design of Experiments	 Knowledge of designs like CRD, RBD, LSD, split plot design, BIBD and their application in analysis of data found in different fields. Factorial experiment and their utilities in different fields. 	 Design of Experiments Design of Experiments Factorial Experiments 	Analyze, Apply and Create
V I	STA- HC-6026	Multivariate Analysis and	 Bivariate and multivariate normal distribution along with their properties and applications in various fields. Non- parametric test such as Kolmogorov- Srinov test, 	1.Bivariate and Multivariate Distributions	Remember, Analyze,

	Non Parametric Methods	Sign test, Wilcoxon- mean Whitney test, Kruskalwallis test, and their practical application.	2. Multivariate Normal Distributions	Understand
			3. Non Parametric Tests	

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