

**KAKCHING KHUNOU COLLEGE
KAKCHING KHUNOU, UMATHEL
KAKCHING DISTRICT, MANIPUR-795103**



DEPARTMENT OF STATISTICS

Program Offered: BA/Bsc Statistics**Program Outcomes (PO):**

The courses of the department of Statistics will enable the student

- To develop the skills to analyze complex statistical data coming from various fields like industry, finance, agriculture , business etc.
- To implement data analysis strategies and develop efficient models for various theoretical postulations
- To understand intricacies of statistical testing and its applications in real world and real life problems
- To analyze, design, and develop experiments in empirical research
- To understand the optimization and computational techniques of the real life problems
- To develop soft skills and practice professional ethics
- To analyze large data sets in the context of real world problems and interpret results using data analytics

Program Specific Outcome:

- Inculcate analytic and decision making aptitude among the students
- To have the advanced and upgraded knowledge of statistics among from both theoretical and practical aspects
- To enable statistical thinking in young minds for better future planning and welfare of the society.
- To contribute to the society through excellence in statistical education and research.
- To provide a platform to all the students and to get experiential learning in this material world

Course Outcomes(CO):

Each courses, in all the programmes, has been designed and fulfills the requirements of the academic and industrial needs. By opting these courses students may be able to qualify the various esteemed competitive examinations like MCS, MPS UPSC, ISS and many others.

These programmes offered by Statistics department are highly employable and enable the students to take position in various Institutes/Universities/Industries for research and development and serve the society.

Learning (Course) Objectives:

Statistics STA:101 (Theory + Practicals)

- I. To learn descriptive statistics that include concepts of statistical population and sample, data and its types, graphical representation of frequency distribution, etc.
- II. To understand measures of central tendency: mean, median , mode
- III. To develop the concept of measures of dispersion; variance and standard deviation
- IV. To know the moments and its different types for grouped and ungrouped data.
- V. Understand the concept of skewness and kurtosis
- VI. To learn probability; concept of sample space; conditional probability; Bayes' Theorem and its applications, etc.

Statistics STA:202 (Theory + Practicals)

- I. To know the concept of random variables and its types; probability density function; mass function etc.
- II. To learn Mathematical expectations and generating functions & characteristic functions
- III. To understand correlation; Karl Pearson's correlation coefficient; Rank correlation coefficient, etc
- IV. Get the concept of curve fitting and regression analysis
- V. To learn various limit theorems like Cauchy Squarz, Chebyshev's inequalities, central limit theorem etc
- VI. Understand the concept of finite differences and numerical analysis: interpolation and extrapolation, numerical integration etc.

Statistics STA: 303 (Theory + Practicals)

- I. To understand discrete probability distributions; Bernoulli trial; binomial & poisson distribution
- II. To learn continuous probability distributions; normal distribution, etc
- III. Understand the theory of estimation and methods of estimation
- IV. To develop the concepts of sample survey and various sampling techniques
- V. To know about the attributes, classification and properties
- VI. To familiarize with concept of demography; mortality rate, fertility rate etc.

Statistics STA: 404 (Theory + Practicals)

- I. Understand the concept of sampling distribution
- II. To learn the Testing of hypothesis; null & alternative hypothesis ;type I,II error, etc
- III. Apply t-distribution, F- distribution, χ^2 test to different kinds of problems
- IV. To know the importance of time series analysis
- V. To be able to design experiments with ANOVA
- VI. To learn about the concept of index numbers

Statistics STA : 505 (Theory + Practicals)

- I. To learn about the concept of set theory and measure
- II. To familiarize with basic mathematics; sequence and series; various tests for convergence etc.
- III. To learn about determinants and matrices and their applications
- IV. Introduction to computer programming and functionalities of its different softwares like MEXCEL etc.
- V. To familiarize with the use of FORTRAN in solving many statistical problems

Statistics STA: 506 (Theory + Practicals)

- I. To know about the normal and bivariate probability distributions
- II. To further understand about the theory of estimation; various types of estimators; confidence interval etc.
- III. Use of LSD in statistical analysis and design of experiments
- IV. Further extend the knowledge in correlation and curve fitting
- V. To understand about the various types of sampling distribution , shape of its curves and properties

Statistics STA: 608 (Theory + Practicals)

- I. Understand the concept of Statistical inference; MPCR, UMPCR etc
- II. To get to know about statistical quality control and its various tools
- III. To extend in knowledge about time series concept; cyclic movements; residual approach etc.
- IV. To learn about various types of sampling; non-sampling errors, etc.
- V. Concept of national income, demand and supply analysis

Statistics STA : 609 (Theory + Practicals)

- I. To understand inverse interpolation formula; Weddle's rule; Sterling' bivariate interpolation
- II. To learn Laplace Everent formula, Newton Cots formula, Sterlings formula etc.
- III. To develop the concept of OR and its various models
- IV. To learn about psychological and educational statistics
- V. To familiarize with Indian Official Statistics (IOS)