



B.H.B. COLLEGE, SARUPETA, ASSAM

Course Details and Syllabus for Add On Course

On

***Application of Statistical
Test in Research***

B.H.B. College, Sarupeta

Department of Statistics

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Syllabus for Add on Course Application of Statistical Test in Research

TOTAL MARKS: 100

Statistics is the branch of mathematics for collecting, analysing and interpreting data. Statistics can be used to predict the future, determine the probability that a specific event will happen, or help answer questions about a survey. Statistics is used in many different fields such as business, medicine, biology, psychology and social sciences.

A Statistical test provides a mechanism for making quantitative decision about a process or processes. The intent is to determine whether there is enough evidence to reject a conjecture or hypothesis about the process. Statistical tests are used in hypothesis testing. They can be used to determine whether a predictor variable has a statistically significant relationship with an outcome variable, estimate the difference between two or more groups.

Statistics is indispensable for decision making in various sector and verticals. It is applied in marketing, e-commerce, banking, finance, human resource, production and information technology. It has been a prominent part of research and is widely used in data mining, medicine, aerospace, robotics, psychology and machine learning. The Government and public sectors where statistical data is a significant part of decision making. It is used for public surveys, whether forecast, I sports scoring and budgeting.

As such the department of statistics has undertaken the enrichment Course on Application of Statistical Test in Research from Nov'2022 onwards. It is a certificate course where learners will learn the basic concept of statistics and various tests of research works.

Duration: The duration of this certificate course is twelve month (One Year).

Eligibility: The minimum education qualification to enroll in this course is H.S. Passed.

Objectives:

- To study the various facts and problems in the research field and to evaluate the Course and results of the changes.
- To make better business decision.
- To determine whether some hypothesis is extremely unlikely given observed data.
- To provide a method for making quantitative decision about a particular sample.

Course Outcome:

- For research analysis.
- For clinical practice.
- For seed testing in agriculture fields.
- To help business create better customer survey.

Course Advantage:

- Students would benefit to gain the basic concept of statistical tests.
- This course would enable to students for further in-depth study of statistical knowledge's.
- It can help to make informed and correct decision.
- It can help to identify the problem or cause of the failure and make corrections.
- To identify patterns and trends.

Admission Process:

- A candidate must pass the H.S. Final examination to enroll in the course.
- Candidate can collect admission form from the department of Statistics.
- As of now admission fees has charged from the students. But for procuring the certificate the students have to pay a minimum fee of Rs.100.
- The candidates should check the eligibility criteria and course details from the college website.

Syllabus of the Course:

Theory:

Total lectures: 32

Credit: 5

Unit 1: Definition of Chi-Square (χ^2) distribution and its mathematical form, Properties of Chi-square distribution (only statements), χ^2 test for testing hypothetical value of population variance (σ^2), χ^2 -test for goodness of fit, χ^2 test for testing independence of attributes.

(Lectures - 12)

Unit 2: Definition and mathematical forms of Student's t-distribution and Fishers t-distribution, Student t-distribution for testing single population mean, Student's t-test for testing the difference of two means, paired t-test.

(Lectures - 12)

Unit-3: Snedecores F-distribution, its definition and mathematical form, F-test for testing the difference of two population variances. F-test for testing several population means, Idea of ANOVA table.

(Lectures - 8)

Practical/Lab

Based on Unit-1, Unit-2 & Unit-3

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