

StatXpress: The Impromptu Research Forum

Welcome to "StatXpress: The Impromptu Research Forum," a focused course designed to equip you with essential statistical concepts and techniques. Throughout this course, you will gain a solid understanding of various types of data, measurement scales, and key analytical methods such as correlation, hypothesis testing, and both parametric and non-parametric techniques. This course is structured to offer you a practical approach to data analysis, enabling you to confidently tackle real-world research challenges.

Course Outline:

- 1. Understand the Basics:**
 - Population, sample, variable, attributes
- 2. Types of Data:**
 - Primary and Secondary Data
 - Qualitative and Quantitative Data
 - Univariate and Multivariate Data
 - Discrete and Continuous Data
- 3. Measurement Scales:**
 - Types of Scale: Nominal, Ordinal, Interval, and Ratio
- 4. Statistical Analysis:**
 - Descriptive Statistics
 - Inferential Statistics
 - Pearson Correlation
 - Chi-Square Test: Goodness of Fit, Odds Ratio, Kolmogorov–Smirnov Test, p-value
- 5. Comparing Means:**
 - One-Sample T-Test
 - Independent Samples T-Test
 - One-Way ANOVA
- 6. Measuring Data:**
 - Measure of Central Tendency
 - Measure of Dispersion
 - Absolute and Relative Measures
 - Measure of Skewness and Kurtosis
- 7. Analyzing Relationships:**
 - Analysis of Bivariate Data
 - Basics of Testing: Null and Alternative Hypothesis, Simple and Composite Hypothesis
- 8. Testing for Normality:**
 - Graphical Tests for Normality: Q-Q Plot, Box Plot, and Histogram
- 9. Non-Parametric Tests:**
 - Kruskal-Wallis
 - Mann-Whitney
 - Wilcoxon Rank
 - Friedman's ANOVA Test