Here's a comprehensive Time Plan for a 10-hour Bridge Course on Statistics, covering Descriptive Statistics & Probability, including Learning Objectives and Learning Outcomes:

Bridge Course on Statistics (Descriptive Statistics I & Probability I)

Total Duration: 10 Hours

Target Audience: First-year undergraduate students from non-stat intensive backgrounds

Delivery Format: In-person/Online, divided into 5 sessions of 2 hours each

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Overall Learning Objectives

By the end of the bridge course, learners will:

1. Understand various concepts of descriptive statistics and probability.
2. Develop skills for correct usage of different measures of descriptive statistics while handling real life data.
3. Gain confidence in solving basic problems involving central tendency, dispersion, skewness, kurtosis and probability.

Expected Learning Outcomes (CLOs)

Learners will be able to:

- Understand quantitative, qualitative, cross-sectional, time-series, discrete and continuous data.
- Apply proper graph to represent various kinds of data.
- Understand the concepts of central tendency, dispersion, skewness and kurtosis.
- Solve problems of probability.
- Interpret the application of descriptive statistics and probability in real-world contexts.

Time Plan

Session	Topics Covered	Learning Objectives	Activities	Outcomes
Session 1 (2 hours)	Statistics: Definition and scope. Concepts of statistical population and sample. Data: quantitative and qualitative, cross-sectional and time-series, discrete and continuous. Scales of measurement: nominal, ordinal, interval and ratio.	Understand population, sample, data and various scales of measurements	Interactive lecture, small exercises	Learners identify various kinds of data and scales.

Session	Topics Covered	Learning Objectives	Activities	Outcomes
Session 2 (2 hours)	Presentation of data: tabular and graphical. Frequency distributions, cumulative frequency distributions and their graphical representations. Stem and leaf displays.	Understand tabular and graphical representation of data. Able to calculate frequency, cumulative frequency and related measures	Concept explanation and construction of graphs with real-life illustrations, exercises	Learners plot graphs and calculate measures based on frequency distribution
Session 3 (2 hours)	Measures of Central Tendency: Mean, Median, Mode. Measures of Dispersion: Range, Mean deviation, Standard deviation.	Apply measures of central tendency and dispersion to real life data sets	Problem-solving sessions, group tasks	Learners use measures of central tendency and dispersion to interpret data sets.
Session 4 (2 hours)	Measures of Dispersion: Coefficient of variation, Ginis Coefficient, Lorenz Curve. Moments, skewness and kurtosis. Quantiles and measures based on them. Box Plot. Outliers.	Understand the concept and usage of lorenz curve, ginis coefficient, moments, skewness and kurtosis; construct boxplot and detect outliers.	Demonstrations with examples, graph, problem-solving sessions, group tasks	Learners calculate, plot moments, ginis coefficient, Lorenz curve and understand their insightful meaning.
Session 5 (2 hours)	Probability: Introduction, random experiments, sample space, events and algebra of events. Definitions of Probability: classical, statistical, and axiomatic. Conditional Probability, laws of addition and multiplication, independent events, theorem of total probability, Bayes' theorem and its applications.	Solve problems using classical and statistical definitions; apply laws of addition, multiplication and independent events; solve problems using Bayes' theorem.	Solving problems in groups, Q&A, recap quiz	Learners solve probability problems; demonstrate comprehensive understanding

Assessment & Evaluation

- Formative assessment: Quizzes after each session (5–10 mins)
- Summative assessment: Final test (MCQ + problem-solving) in last session (30 mins)
- Feedback: Exit slips / feedback forms at end of course