# Session 1

## What is Statistics?

Types of statistics

## Descriptive statistics fundamentals

Population vs sample

Types of variables

## Measurement levels of variables

## Describing categorical data

Frequency, relative frequency,cumulative distribution tables

Bar chart, pie chart,pareto diagram

Cross table(contingency tables), side by side bar chart

## Describing numeric data

Histogram , Scatter plots

Outliers

# Session 2

## Measures of central tendency

Mean, Median, Mode

## Measures of asymmetry

Skewness

## Measures of variability

Variance

Standard Deviation

Coefficient of variation,

Range,

Dot plots

Box plots

## Measures of POSITION

Quartiles and Percentiles

İnterquartile range

# Session 3

## Experimental vs theoretical probability

Expected Value

Probability freuqnecy distribution

Complements

## The different ways events can interact

The intersection of two sets

The Union sets

Mutually Exclusive Sets

Dependent and independent events

## Conditional probability

Law of total variability

Additive law

Multiplication rule

# Session 4

## Discrete Probability Distributions

Uniform Distribution

Bernoulli Distribution

Binomial Distribution

Poisson Distribution

## Continuous Probability Distributions

Normal Distribution

Students T Distribution

Chi-Squared Distribution

Exponential Distribution

Logistic Distribution

# Session 5

## Sampling Distributions & Central Limit Theorem

Sampling Methods

Central Limit theroem

## Estimation and Confidence intervals

Point Estimate for a Population Mean

## Hypothesis Testing

Null and Alternate hypothesis

One-Sample Tests of Hypothesis

Two-Sample Tests of Hypothesis

# Session 6

## Correlation and Linear Regression

Signiificance of correlation coefficient

Least Squares Principle

Drawing the Regression Line

## Multiple Regression Analysis

Evaluating the Assumptions of Multiple Regression

# Session 7

Analysis of Variance (ANOVA)

A/B Testing