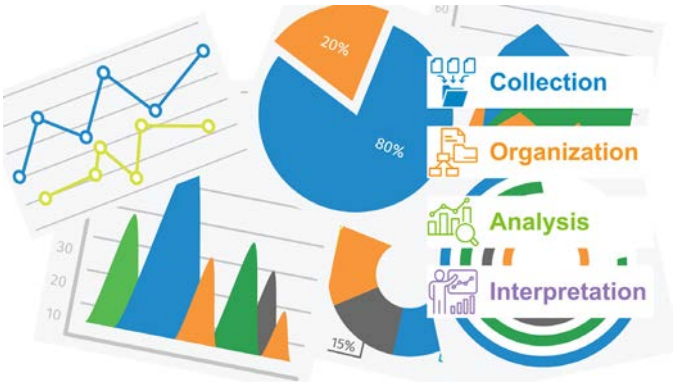
Statistics Basics

eLearning courses designed to increase productivity and profits



Learning Made Simple, Visual, and Interactive

Credit Hours 2.5

The THORS *Statistics Basics* course offers a comprehensive overview of basic statistical concepts and methods of data analysis. This course provides a fundamental understanding of the different data types, central tendency, data variation, and data visualization. Learners are then introduced to various concepts and methods of analyzing data including sampling methods, data distribution, variable relationships, hypothesis testing, and experimental design.

Learning Objectives

- Develop an understanding of different types of data.
- Identify the measures of central tendency and data variation.
- Gain an understanding of data visualization techniques.
- Understand key concepts such as population and sample and sampling methods used.
- Explain the characteristics and types of data distribution.
- Analyze variable relationships and hypothesis testing.
- Elaborate factor effects, factor interactions, and the major principle of experimental design.

Table of Contents

I. Data

- **Data Types**
  - Quantitative Data
  - Qualitative Data
- **Central Tendency**
  - Mean
  - Median
  - Mode
- **Data Variation**
  - Range
  - Standard Deviation
  - Coefficient of Variation (CV)
  - Degrees of Freedom

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I. Data *(continued)*

- **Data Visualization**
  - Histogram
  - Box Plot
  - Scatter Plot
  - Line Chart
  - Pareto Chart

II. Data Analysis

- **Population and Sample**
- **Sampling Methods**
- **Data Distribution**
  - Characteristics
  - Types

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II. Data Analysis *(continued)*

- **Variable Relationships**
  - Correlation
  - Regression
- **Outlier Identification**
  - Visual Methods
  - Statistical Methods
- **Central Limit Theorem (CLT)**
- **Hypothesis Testing**
  - t-test
  - Chi-Square Test
  - Z-Test

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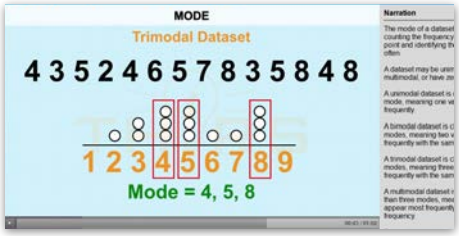
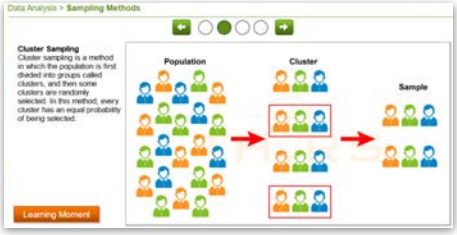
II. Data Analysis *(continued)*

  - Analysis of Variance (ANOVA)
  - p-Value
  - Confidence Level
- **Factor Effects**
- **Factor Interactions**
- **Experimental Design**
  - Replication
  - Randomization
  - Blocking





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