Publication date : 09/30/2025

Course : Descriptive statistics, introduction

Practical course - 2d - 14h00 - Ref. UES
Price : 1680 CHF E.T.

4,5 / 5

Statistics, which had become a stuffy academic chapter, has been given a new lease of life since the arrival of Big Data. Indeed, Big Data processing requires recurring recourse to basic statistical techniques. This course will give you a practical grasp of this mathematical and algorithmic foundation.

Teaching objectives

At the end of the training, the participant will be able to:

- Understanding the benefits of descriptive statistics
- Understand how to process raw data
- Understanding basic statistical tools and calculations
- Pose a statistical problem and find the appropriate method

Intended audience

Professionals who need to perform statistical calculations on a daily basis to process their data. Data analysts, decision support project managers, future data scientists.

Prerequisites

No special knowledge required.

Practical details

Hands-on work

A full afternoon is devoted to practicing descriptive statistics on data chosen by the participants.

Teaching methods

Each participant will bring a data file that they use professionally to calculate basic statistics.

Course schedule

PARTICIPANTS

Professionals who need to perform statistical calculations on a daily basis to process their data. Data analysts, decision support project managers, future data scientists.

PREREQUISITES

No special knowledge required.

TRAINER QUALIFICATIONS

The experts leading the training are specialists in the covered subjects. They have been approved by our instructional teams for both their professional knowledge and their teaching ability, for each course they teach. They have at least five to ten years of experience in their field and hold (or have held) decision-making positions in companies.

ASSESSMENT TERMS

The trainer evaluates each participant's academic progress throughout the training using multiple choice, scenarios, hands-on work and more.
Participants also complete a placement test before and after the course to measure the skills they've developed.

1 Definition

- Definition of descriptive statistics. The study of uncertainty.
- Comparison of calibrated products with random data.
- Introduction to the randomness of statistical data.
- Conclusion: the statistician's question.

Exercise

Studying the statistician's problem: identifying the differences between standardized products and others with a hazard.

2 Mathematical formalization

- Indexing from 1 to n. Absolute value.
- The Sigma symbol for writing sums.
- The square and the square root.
- Numbers, frequencies, quartiles, percentiles: explanations and graphical representations.
- Interval calculation: processing continuous data.

Exercise

Application of each concept presented on exercises.

3 Statistical processing of one-dimensional data

- Data type: qualitative or quantitative.
- Data with numbers: frequency calculation and interpretation.
- Data sorting and processing: statistical formatting of various examples of raw data.
- Graphical representation.
- Position parameters: mean, mode, median.
- Dispersion parameters: range, quantiles, decile, variance.
- Variance: an average "of deviations".

Exercise

Data transformation, sorting and representation. Dispersion measurement.

4 Random variables

- Definition. Category of variables.
- Examples and examination of random variables.
- Distribution curves.
- Explanations of confidence intervals.
- The best-known law: the normal law.

Exercise

Use a normal distribution table.

5 Two-dimensional descriptive statistics: contingency tables

- The data.
- Graphical representation.
- Covariance.
- The linear correlation coefficient.

Exercise

Calculation of covariances and correlation coefficients. Analysis.

TEACHING AIDS AND TECHNICAL RESOURCES

• The main teaching aids and instructional methods used in the training are audiovisual aids, documentation and course material, hands-on application exercises and corrected exercises for practical training courses, case studies and coverage of real cases for training seminars.
• At the end of each course or seminar, ORSYS provides participants with a course evaluation questionnaire that is analysed by our instructional teams.
• A check-in sheet for each half-day of attendance is provided at the end of the training, along with a course completion certificate if the trainee attended the entire session.

TERMS AND DEADLINES

Registration must be completed 24 hours before the start of the training.

ACCESSIBILITY FOR PEOPLE WITH DISABILITIES

Do you need special accessibility accommodations? Contact Mrs. Fosse, Disability Manager, at psh-accueil@orsys.fr to review your request and its feasibility.

6 Case study: using participant data

- Highlighting the statistical problem.
- Data formatting.
- Calculation of basic statistics and graphical representation.
- Finding the right method for the problem.

Dates and locations

REMOTE CLASS
2026 : 15 June, 28 Sep., 7 Dec.