

IDENTIFICATION

Course code : E1CP1MT3
ECTS : 1

DURATION

Lectures : 6
Tutorial classes : 6
Labs : 8
Total : 20

Project :
Personnal work :

ASSESSMENT

Lab work : 2.0h - Coefficient : 1.0 Writ-
ten exam : 2.0h - Coefficient : 1.0 Written
exam : 2.0h - Coefficient : 1.0

TEACHING MATERIALS

Materials available on the Moodle platform.

LANGUAGE

English

CONTACT

KAMAL EL OMARI
kamal.omari@univ-reunion.fr

Modifié le : 14 juillet 2026

UE : MATHEMATIQUES

COURSE : Descriptive Statistics

SCOPE OF THE COURSE

OBJECTIVES

1. Descriptive statistics for a single variable

- Definitions and vocabulary.
- Statistical variable and nature of a variable.
- Frequencies.
- Graphical representations of a distribution.
- Measures of central tendency : mean, median.
- Measures of dispersion : variance, quartiles.

2. Descriptive statistics for a pair of variables

- Two-dimensional statistical series.
- Correlation : covariance, correlation coefficient, analysis of the relationship between two variables.
- Linear (affine) fitting :
 - Scatter plot.
 - Mayer's line.
 - Least squares method.
- Non-linear regressions.
- Contingency table.

COMPETENCE AND SKILLS

- Understand and define the fundamental concepts of descriptive statistics : population, sample, variable, types of data (quantitative and qualitative).
- Calculate and interpret measures of central tendency and measures of dispersion.
- Describe the shape of a distribution using symmetry, skewness, and kurtosis.
- Know and use different types of graphical representations : histograms, bar charts, box plots, scatter plots, pie charts.
- Organize and present data in the form of frequency tables and cross-tabulations.
- Use statistical software (Python / R) to perform descriptive analyses and generate graphical representations.
- Analyze and interpret results and formulate relevant conclusions based on data analysis.
- Understand the fundamental concepts of linear regression and the relationship between dependent and independent variables.
- Calculate and interpret regression coefficients (slope and intercept) using the least squares method.
- Calculate and interpret the coefficient of determination R^2 .
- Use a linear regression model to make predictions.
- Use a numerical tool to perform regression.

PROGRAM
BIBLIOGRAPHY
REQUIREMENTS