

IDENTIFICATION

Course code : E3AG6RD7
ECTS : 1

DURATION

Lectures : 2
Tutorial classes : 8
Labs : 0
Total : 10

Project :
Personnal work :

ASSESSMENT

Continuous assessment

TEACHING MATERIALS

Handout Moodle

LANGUAGE

English

CONTACT

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Modifié le : 14 juillet 2026

UE : UE6-R

COURSE : Data Analysis 1

SCOPE OF THE COURSE

OBJECTIVES

This course aims to equip engineering students with the knowledge needed to design experimental campaigns and analyze their results. They will be able to identify key factors and identify main trends, while supporting their results with information on the inherent uncertainty in this analysis. Be able to conduct these analyses using a specialized numerical tool : R.

COMPETENCE AND SKILLS

Design and implement a simple experimental plan Adapt and select product characterization methods (physicochemical, rheological, sensory, nutritional, shelf life) based on objectives

PROGRAM

Statistical tests : Goodness-of-fit tests : Pearson's chi-squared test, Kolmogorov-Smirnov test Parametric comparison tests : T-test, ANOVA Non-parametric comparison tests : Mann-Whitney test, Wilcoxon test, Kruskal-Wallis test, chi-squared test Correlation tests : Pearson's test, Spearman's test, Kendall's test Experimental designs : Introduction. Full factorial design. Example. Responses. Factors. Levels. Main effects and interaction effects. Representation. Iso-response curves.

BIBLIOGRAPHY

Husson, François, Sébastien Lê, and Jérôme Pagès. *Analyse de données avec R*. Presses universitaires de Rennes, 2016. *Introduction aux plans d'expériences*, Jacques Goupy, Dunod, 2017.

REQUIREMENTS

Mathematical foundations in analysis, algebra and geometry ; probability, descriptive and inferential statistics ; Practice with a programming language (R)