

## IDENTIFICATION

Course code : ESI-SPI-CI-AG4-S7-UE2-EC4  
ECTS : 1

## DURATION

Lectures : 2  
Tutorial classes : 2  
Labs : 6  
Total : 10

Project :  
Personnal work :

## ASSESSMENT

## TEACHING MATERIALS

## LANGUAGE

English

## CONTACT

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UE : UE7-R

COURSE : Data Analysis 2

## SCOPE OF THE COURSE

### OBJECTIVES

This course aims to equip student-engineers 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. To be able to conduct these analyses using a specialized numerical tool : R.

### COMPETENCE AND SKILLS

### 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