

UE Statistical analysis and document mining



Niveau d'étude
Bac +4



ECTS
6 crédits



Crédits ECTS
Echange
6.0



Composante
UFR IM2AG
(informatique,
mathématiques
et
mathématiques
appliquées)



Période de
l'année
Printemps (janv.
à avril/mai)

- > **Langue(s) d'enseignement:** Anglais
- > **Ouvert aux étudiants en échange:** Oui
- > **Crédits ECTS Echange:** 6.0
- > **Code d'export Apogée:** GBXAM24

Présentation

Description

The aim of this course is to present the statistical approaches for analysing multivariate data. The information age has resulted in masses of multivariate data in many different field: finance, marketing, economy, biology, environmental sciences,... The theoretical and practical aspects of multivariate data analysis are given equal importance. This balance is achieved through practicals involving actual data analysis using the R software.

Content

1. Multiple linear regression. Least squares, Gaussian linear model, test of linear hypotheses, one-way analysis of variance.
2. Principal Components Analysis (PCA).
3. Classification, linear discriminant analysis, perceptron, Naive Bayes
4. Text mining, numeric representation of texts, connexion with graph clustering.

Heures d'enseignement

| | | |
|----|----|-------|
| CM | CM | 16,5h |
| TD | TD | 7,5h |
| TP | TP | 25,5h |

Pré-requis recommandés

Elementary notions in probability theory (probability distribution, joint probability density function for random vectors, conditional distribution, expectation, variance, covariance, Gaussian distribution)

Elementary notions in mathematical statistics (estimator, confidence interval, statistical tests).

As a bonus: simple linear regression, linear algebra (matrix reductions), elementary notions in Rstudio and the R software.

Période : Semestre 8

Liste des enseignements

| | Nature | CM | TD | TP | Crédits |
|--|---------|-----|------|-----|---------|
| Statistical analysis and document mining | MATIERE | 15h | 15h | 24h | |
| Statistical analysis and document mining complementary | MATIERE | | 7,5h | 9h | |

Infos pratiques

Contacts

Responsable pédagogique

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Campus

› Grenoble - Domaine universitaire