

Modèles de régression et Statistical Softwares

Lecturers

Davy PAINDAVEINE (Coordinator) and Toufik ZAHAF

Course mnemonic

ACTU-F4001

ECTS credits

5 credits

Language(s) of instruction

Unknown

Course period

Second term

Campus

Plaine

Course content

Part 1. Linear regression (least squares estimation, matrix notation, variance estimation, exact and asymptotic inference on the regression parameter, weighted and generalized least squares estimations)

Part 2. Introduction to the use of a statistical software: tools for exploratory analysis, variable manipulation, plots. Applied regression analysis (analysis and goodness-of-fit procedures)

Objectives (and/or specific learning outcomes)

After following this teaching unit, a student will be able to:

- > explain why regression models are of interest
- > perform a regression analysis that is suitable to the context
- > conduct, on the computer, a regression analysis and related analyses

Teaching method and learning activities

Theoretical lectures

Project/howeworks

Use of statistical softwares on various examples

Contribution to the teaching profile

- > Being able to analyze rigorously and with critical thinking a data set- Choosing the suitable actuarial models and techniques for a given problem- Analyzing with rigor and critical thinking the results obtained- Becoming independent enough to identify, collect and analyze the data needed to solve a given problem- Using a clear and rigorous language- Writing in a rigorous and concise way reports presenting a

problem, the models and techniques used to address it, and the results obtained- Present verbally in a clear and concise way the results of an analysis

References, bibliography and recommended reading

Ravishanker, N., and D. K. Dey (2001). A first course in linear model theory, Chapman & Hall.

Dobson, A. J. (2001). An introduction to generalized linear models, Chapman & Hall.

Course notes

Syllabus and Université virtuelle

Other information

Place(s) of teaching

Plaine

Contact(s)

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Evaluation method(s)

written examination and Project

Evaluation method(s) (additional information)

Part 1: exam of a theoretical nature (the exam will offer both open and closed questions)

Part 2: project/Writing of a report

Determination of the mark (including the weighting of partial marks)

The exam in part 1 and the project in part 2 each contribute to 50% of the final grade.

For the 50% associated with part 2, the various components of the project will be evaluated as follows:

- > Exploratory analysis: /4 points
- > Regression analysis: /8 points
- > Quality of the report: /4 points
- > Knowledge in statistics (on the basis of the oral presentation): /4 points

Grades from Part 1 or Part 2 that are larger than or equal to 10/20 are pushed to the next session and/or to the next academic year.

Main language(s) of evaluation

French

Other language(s) of evaluation, if applicable
English

Programmes

Programmes proposing this course at the faculty
of Sciences

MA-ACTU | **Master in Actuarial Science** | finalité Professional/unit 1

