

OIECOX09 - Data Analysis

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Department: International affairs
Semester: 1

Course level: Undergraduate (L3)
Domain: Economics
Teaching language: English
Number of in-class hours: 18h
Number of course sessions: 11 + Exam
ECTS: 3

Course description and objectives

The aim of this course is to introduce the basic methods in Data analysis and to help students in using these tools with different software. The course focuses on simple predictive analysis (linear regression or multidimensional analysis, factor approach, principal components approach. The courses take place in the computer lab in order to emphasize on practical aspects of data analysis.

Prerequisites

Basic knowledge on probabilities and statistics

Learning outcomes

At the end of the course, students are able to describe and present data, to summarize different types of variables, to analyze the relation between these variables, to practice regression and prediction, to cluster and compare different groups of observations.

Assignments and grading

- Active class participation is a main feature of the course's organization. Students work independently on real datasets with data analysis software. A final exam evaluates the students. The final exam is also on computer. The final exam counts for 50% of the note. Participation counts for another 50% of the note.

The numerical grade distribution will dictate the final grade. The passing grade for a course is 10/20.

Class participation: Active class participation – this is what makes classes lively and instructive. Come on time and prepared. Class participation is based on quality of comments, not quantity.

Exam policy: In the exam, students will not be allowed to bring any document (except if allowed by the lecturer). Unexcused absences from exams or failure to submit cases will result in zero grades in the calculation of numerical averages. Exams are collected at the end of examination periods.

Course structure

Session	Topic
1	Data visualization with a statistic software
2	Descriptive statistics
3	Sampling and statistical inference
4	Analyzing relationships among variables
5	Comparison of samples
6	Regression and prediction
7	Time series
8	Principal components analysis
9	Correspondence analysis
10	Clustering
11	Application
12	Final Exam

Bibliography

- Heumann (2016), Introduction to Statistics and Data Analysis, Springer, 455 pages
- J.L. Devore (2011), Introduction to Statistics and Data Analysis, 4th Edition, 944 pages
- C. Judd (2017), Data Analysis, New Edition, 366 pages
- D.S Moore (2009), Introduction to the Practice of Statistics, Freeman, 690 pages

MyCourse

This course is on MyCourse: **No**

Academic integrity

Be aware of the rules in Université Paris Dauphine about plagiarism and cheating during exams. All work turned in for this course must be your own work, or that of your own group. Working as part of a group implies that you are an active participant and fully contributed to the output produced by that group.

Academic calendar

Dates (Monday/Sunday)		
02/09/19	09/08/19	Welcome Week + French seminar
09/09/19	15/09/19	1
16/09/19	22/09/19	2
23/09/19	29/09/19	3
30/09/19	06/10/19	4
07/10/19	13/10/19	5
14/10/19	20/10/19	6
21/10/19	27/10/19	7
28/10/19	03/11/19	Holidays
04/11/19	10/11/19	8
11/11/19	17/11/19	9
18/11/19	24/11/19	10
25/11/19	01/12/19	11
02/12/19	08/12/19	Review w.
09/12/19	15/12/19	Exams
16/12/19	22/12/19	
23/12/19	29/12/19	Holidays
30/12/19	05/01/20	
06/01/20	12/01/20	