Applied Multivariate Techniques
Monica Chiogna
PhD Course, XXXVI cycle

Course Description

This course provides a quick overview of the most common multivariate techniques. Topics include: dimension reduction, classification, clustering. The course will also try to touch some modern data analysis techniques, through the development of small projects.

Objectives

The objectives of this course are:

- to learn some of the traditional tools for analysing multidimensional data;

- to get hands-on experience in using some of these techniques, through the development of a small project.

Schedule

22	November	11.30-13.00	Multidimensional data
22	November	15.00-16.30	Lab session
30	November	11.00-12.30	Dimension Reduction
30	November	15.00-16.30	Lab session
5	December	11.30-13.00	Cluster Analysis
5	December	15.00-16.30	Lab session
11	December	11.30-13.00	Discriminant Analysis
11	December	15.00-16.30	Trees
12	December	11.30-13.00	Lab session

Recommended texts

- Härdle, W. Simar, L. (2007). *Applied Multivariate Statistical Analysis*, Springer.

- Hastie, T., Tibshirani, R., and Friedman, J. (2001). *The Elements of Statistical Learning: Data Mining, Inference, and Prediction*, Springer.

- Mardia, K.V., Kent, J.T., and Bibby, J.M. (1979). *Multivariate Analysis*, Academic Press.

Final Exam

December, 20 h.13.00