

# Applied multivariate techniques

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## Course schedule

Regular Time: 09:30-12:30 (except for THU 15/02 09:30-11:30)

- FRI 19/01 Matrix decompositions and Dimensionality Reduction. (MKB: Appendix A, Chapter 8)
- TUE 23/01 Multidimensional Scaling (MKB: Chapter 14) and other dimensionality reduction methods
- MON 29/01 Canonical Correlation Analysis and extensions (MKB: Chapter 10)
- FRI 02/02 Modern multiple testing approaches
- TUE 06/02 Knockoff Methods, Split methods for post-selection inference
- TUE 13/02 Conformal Inference
- THU 15/02 Summary and insight into further research directions

## Notes

A reference for part of the course is certainly K. V. Mardia, J. T. Kent, & J. M. Bibby (1979) *Multivariate Analysis*. New York: Academic Press [MKB].

The rest of the lectures will be based on research articles and didactic material provided by the teacher.

Despite the use of personal computer - together with a statistical software such as R, Python or Matlab - during the the classes is not mandatory, it may become useful from time to time.

## Teaching, Exams and Final Score

Structure of a prototypical lesson:

- 60 mins: discussion about contents of the previous lessons (with extra readings and exercises)
- 15 mins: break
- 75 mins: theoretical contents and lab