

3 credits

15.0 h

Q2

Teacher(s)	Pircalabelu Eugen ;
Language :	English
Place of the course	Louvain-la-Neuve
Main themes	The course focuses on high-dimensional settings and on techniques to that allow parameter estimation for high-dimensional models in statistics.
Aims	<p>A. Eu égard au référentiel AA du programme de master en statistique, orientation générale, cette activité contribue au développement et à l'acquisition des AA suivants, de manière prioritaire : 1.4, 1.5, 2.4, 4.3, 6.1, 6.2.</p> <p>1 B. By the end of this class, the student will be able to understand the basic concepts of penalized estimation and will be able to apply these concepts to perform estimation/inference for high-dimensional models in statistics.</p> <p>-----</p> <p><i>The contribution of this Teaching Unit to the development and command of the skills and learning outcomes of the programme(s) can be accessed at the end of this sheet, in the section entitled "Programmes/courses offering this Teaching Unit".</i></p>
Evaluation methods	The evaluation of the students is project-based.
Content	<p>The course outline is as follows:</p> <ul style="list-style-type: none"> • Challenges concerning high-dimensional models • Regularized methods in high-dimensional statistics • Parameter estimation • Tuning parameter selection • Feature selection • Graphical modeling • High-dimensional inference
Bibliography	<ul style="list-style-type: none"> • Hastie, T., Tibshirani, R. and Friedman, J. (2009). The Elements of Statistical Learning: Data Mining, Inference, and Prediction. Springer. • Bühlmann, P., van de Geer, S. (2011). Statistics for High-Dimensional Data. Springer. • Hastie, T., Tibshirani, R. and Wainwright, M. (2015). Statistical Learning with Sparsity: The Lasso and Generalizations. Chapman and Hall/CRC.
Other infos	The course material consists of slides made available to the students.
Faculty or entity in charge	LSBA

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Aims
Master [120] in Statistic: General	STAT2M	3		