Discriminant Analysis and Qualitative Variables				
Hours		Status	Term	Audience
Lectures	Tutorials	Status	Term	Audience
15	0	Compulsory	10	M2 ISF
Lecturer		Evaluation	Weight	ECTS
Ali Skalli		Written exam	2	2.5

Abstract:

The first part of this course introduces discrete choice models with binary outcomes and discusses the links between the linear probability model, the discriminant function, the probit and the logit models. Minimum Khi squared methods are also discussed and their usefulness in presence of grouped data is highlighted. The second part of the course focuses on unordered categorical variables and their modelling. It discusses the multinomial logit as well as MacFadden's conditional logit models. A number of extensions are also discussed, including the Luce model, the elimination by aspect model and the nested logit model. Ordered and sequential categorical variables are then discussed. The last part extends the discriminant analysis methods discussed in the first part to the case of polytomous models. It also introduces the notion of misclassification cost and establishes a link between discriminant analysis in the case of m categories and the conditional logit model.

Description:
- Partie 1 : Discrete Regression Models
    - Regression and Discriminant Analysis
    - Probit and Logit models
    - Minimum Khi 2 methods
- Partie 2 : Modelling categorical variables
    - The multinomial logit model
    - Goodness of fit measures
    - McFadden's conditional logit
    - Extensions
    - Ordered categorical variables
    - Sequential categorical variables
- Partie 3 : Discriminant Analysis
    - Prior probabilities and the cost of missclassification
    - Logistic discrimination
    - Multi-group discrimination

Teaching method:
- Lectures

Prerequisites:
- Least squares and Likelihood maximization estimation methods.

References (*Textbooks only*)**:**

- Thomas A. (2000), Econométrie des Variables Qualitatives, Dunod.

- Greene, W. H. (2012), Econometric Analysis, Pearson (Chapitres 17 et 18).

- Maddala, G. S. (1983), Limited-dependent and qualitative variables econometrics, Cambridge University Press.