

## Non Parametric Models

Course title - Intitulé du cours	Non Parametric Models
Level / Semester - Niveau /semestre	M2 / S1
School - Composante	Ecole d'Economie de Toulouse
Teacher - Enseignant responsable	DAOUIA ABDELAATI
Other teacher(s) - Autre(s) enseignant(s)	
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Other teacher(s) - Autre(s) enseignant(s)	
Lecture Hours - Volume Horaire CM	21
TA Hours - Volume horaire TD	
TP Hours - Volume horaire TP	0
Course Language - Langue du cours	Anglais
TA and/or TP Language - Langue des TD et/ou TP	Anglais

### Teaching staff contacts - Coordonnées de l'équipe pédagogique :

E-mail: [Abdelaati.daouia@tse-fr.eu](mailto:Abdelaati.daouia@tse-fr.eu)

Office number: T216

Office Hours: wednesdays 11-12 am / 2-3 pm

Preferred means of interaction: at the end of class, by appointment

### Course's Objectives - Objectifs du cours :

This course provides a modern view of the most popular nonparametric methods, especially on the important topics of density and regression estimation in both univariate and multivariate cases. The basic idea of those methods is to let the data speak for themselves without recourse to any a priori parametric specification. For each method, we will introduce the underlying theoretical aspects (relevant mathematical results) although the proofs will be skipped. We will spend more time on cultural aspects (knowledge of the methodology and interpretation of statistical results), computational aspects (implementation using R and Matlab softwares), and case studies (returns of education, assets returns, etc). The course will take place in a computer room so that we can illustrate immediately the ideas covered in lecture through simulated and real data examples. The course notes, data sets, exercises and their solutions, R and Matlab codes, and other materials will be made available on the university's course website.

### Prerequisites - Pré requis :

Traditional mathematical statistics, Basics of R programming.

### Practical information about the sessions - Modalités pratiques de gestion du cours :

The course will take place in a computer room, laptops and tablets are accepted in the class.

**Grading system - Modalités d'évaluation :**

One final exam (50%), one project (50%).

**Bibliography/references - Bibliographie/références :**

Wasserman, L. (2006): All of Nonparametric Statistics. Springer.

See university's course website.

**Session planning - Planification des séances :**

September to October.

Mondays : 2:00pm to 5:00pm

**Distance learning – Enseignement à distance :**

Interactive virtual classrooms MCQ tests and other online exercises and assignments Remote (online) tutorials (classes) Chatrooms/Forum