UE10 Algebra refresher

Course title - Intitulé du cours	UE10 Algebra refresher
Level / Semester - Niveau /semestre	M2 / S1
School - Composante	Ecole d'Economie de Toulouse
Teacher - Enseignant responsable	BLANCHET ADRIEN
Other teacher(s) - Autre(s) enseignant(s)	
Other teacher(s) - Autre(s) enseignant(s)	
Other teacher(s) - Autre(s) enseignant(s)	
Other teacher(s) - Autre(s) enseignant(s)	
Other teacher(s) - Autre(s) enseignant(s)	
Lecture Hours - Volume Horaire CM	15
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 :

email: Adrien.Blanchet@ut-capitole.fr

office: MF213

office hours: On Tuesday 2 PM - 3:30

Course's Objectives - Objectifs du cours :

This Algebra refresher course is dedicated to an overview of all the notions of Algebra which are requested to attend the Master in TSE. These notions are supposed to be known by the students. The lectures will consist in a quick reminder with only a few proof rather than a proper lecture. References to classical books will be provided during the lectures. Exercises will be provided to the students together with a few corrections in order to review the different methods wchch will eb used in the sequel of the year.

Chapter 1: vector spaces

sub-vector spaces, basis, change of basis, kernel, image, rank-nullity theorem, linear applications with applications to the resolution of linear systems

Chapter 2: reduction of endomorphism

determinant, diagonalisation, Jordan's trigonalisation, Cayley-Hamilton's theorem, application to the power and exponential of a matrix

Chapter 3: Euclidean spaces

quadratic form, Gauss' reduction, scalar product, Cauchy-Schwarz inequality, orthogonal basis, orthogonal group

Chapter 4: Projection

projection on a sub-vector space, orthogonal projection, distance to a sub-vector space, separation theorem

Prerequisites - Pré requis :

All the notions stated above.

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

No laptop, no tablets, no phone.

The students are supposed to be on time an to come regularly.

The above outline is the planned lecture but it can easily be changed to fit the students' requests. This will be discussed in class

Grading system - Modalités d'évaluation :

No grade.

Bibliography/references - Bibliographie/références :

Any lecture of linear algebra.

UE1: Econometric Methods for Empirical Economics

Course title - Intitulé du cours	UE1: Econometric Methods for Empirical Economics
Level / Semester - Niveau /semestre	M2 / S1
School - Composante	Ecole d'Economie de Toulouse
Teacher - Enseignant responsable	GUALDANI CRISTINA
Other teacher(s) - Autre(s) enseignant(s)	
Other teacher(s) - Autre(s) enseignant(s)	
Other teacher(s) - Autre(s) enseignant(s)	
Other teacher(s) - Autre(s) enseignant(s)	
Other teacher(s) - Autre(s) enseignant(s)	
Lecture Hours - Volume Horaire CM	15
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 :

1) Email address: cristina.gualdani@gmail.com

2) Office number: unknown at the moment.

3) Office hour: will be scheduled after the lecture timetable is arranged.

4) Preferred means of interactions: all types of questions, comments and suggestions during and after the lectures and during office hours are highly encouraged and more than welcome.

Comments, suggestions, and organizational questions by email are also very welcome. However, please refrain from asking econometrics questions by email. If a student cannot come to the regular office hours, then we can schedule an extra appointment by email.

Course's Objectives - Objectifs du cours :

The course covers leading methods for identifying, estimating and testing models where dependent variables have supports restricted in some important way (limited dependent variables), i.e., discrete dependent variables (e.g., employment status, transportation mode, credit rating), continuous dependent variables with strictly positive probability mass on one or more support points (e.g., hours worked, charitable contributions), dependent variables whose realisations are observed by the researcher only in some cases (e.g., top coding of wealth), and count dependent variables (e.g., number of a firm's patent per year).

By the end of the course, students should be able to: (1) discuss identification and inference in models with limited dependent variables and explain why econometric methods traditionally developed for non-limited dependent variables may fail; (2) implement the estimation of models

with limited dependent variables in Stata (or any other preferred software); (3) test the non-violation of the main assumptions characterising models with limited dependent variables.

Prerequisites - Pré requis :

It is assumed that students have a working knowledge of basic linear algebra (e.g. linear systems of equations, matrix algebra), multivariate calculus (e.g. partial derivatives, multivariate optimization), elementary probability theory (e.g. joint distributions, conditional expectations, variances and correlations), statistical inference (e.g. consistency, unbiasedness, confidence intervals, hypothesis testing), and intermediary econometrics (ordinary least squares, instrumental variable estimation, maximum likelihood estimation, generalised method of moments estimation). Elementary knowledge of identification in econometrics is welcome.

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

Laptops and tablets are accepted.

Students are expected to attend all the classes.

Grading system - Modalités d'évaluation :

Mock exam: time permitting, there will be a mock exam at the end of the course. It should represent a good preparation for the final exam. It should also be useful for students to review the class material. Solutions will be posted online together with the lecture slides.

Exam: the final course marks are exclusively determined by the closed-book final exam, which can include all material of the lectures.

Bibliography/references - Bibliographie/références :

There is no required textbook for the course, but classes often follow the notation and presentation in Wooldridge, Econometric Analysis of Cross Section and Panel Data: Second Edition, MIT Press, 2010. Additional articles to read will be listed during each class.

High-Dimensional Models

Course title - Intitulé du cours	High-Dimensional Models
Level / Semester - Niveau /semestre	M2 / S1
School - Composante	Ecole d'Economie de Toulouse
Teacher - Enseignant responsable	Eric GAUTIER
Other teacher(s) - Autre(s) enseignant(s)	
Other teacher(s) - Autre(s) enseignant(s)	
Other teacher(s) - Autre(s) enseignant(s)	
Other teacher(s) - Autre(s) enseignant(s)	
Other teacher(s) - Autre(s) enseignant(s)	
Lecture Hours - Volume Horaire CM	15h
TA Hours - Volume horaire TD	0
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 :

Professor: Eric Gautier, office MF504, eric.gautier@tse-fr.eu, available for questions in the classroom after class in the same room, else by appointment.

Course's Objectives - Objectifs du cours :

- The following themes will be studied:
- Notions of convex analysis
- Model selection, nonparametrics, and thresholding
- Lasso and Dantzig selector for the linear model
- Generalized linear model
- Generalizations of the Lasso (group Lasso, fused Lasso, multivariate and graphical models)
- Algorithms

Prerequisites - Pré requis :

Linear and logistic regression, maximum-likelihood, basic Bayesian statistics, optimization, and R programming.

Grading system - Modalités d'évaluation :

The final grade comes from one homework (by group of 3) that counts for 1/3 and a final exam (2 hours ; no book, notes, telephone or tablet allowed ; with uestions on the course material and exercise(s)).

Bibliography/references - Bibliographie/références :

Peter Bühlmann & Sara van de Geer, Statistics for High-Dimensional Data, Springer

Christophe Giraud, Introduction to High-Dimensional Statistics, Chapman &Hall

Trevor Hastie, Robert Tibshirani, & Martin Wainwright, Statistical Learning with Sparsity, Chapman &Hall.

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)	
Other teacher(s) - Autre(s) enseignant(s)	
Other teacher(s) - Autre(s) enseignant(s)	
Other teacher(s) - Autre(s) enseignant(s)	
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

Office number: MF 305

Office Hours: Thursdays 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.

Tuesdays: 9.30 am - 12.30 pm.

Panel Data Analysis

Course title - Intitulé du cours	Panel Data Analysis
Level / Semester - Niveau /semestre	M2 / S1
School - Composante	Ecole d'Economie de Toulouse
Teacher - Enseignant responsable	BOUMAHDI RACHID
Other teacher(s) - Autre(s) enseignant(s)	
Other teacher(s) - Autre(s) enseignant(s)	
Other teacher(s) - Autre(s) enseignant(s)	
Other teacher(s) - Autre(s) enseignant(s)	
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 :

Email: rachid.boumahdi@TSE-fr.eu

Office(s) number(s): MF 223 and MS 111

office(s) hours/day(s) of the week when students can drop by: Tuesday and Thursday at 2:00pm

Preferred means of interaction: by email and prior appointment

Course's Objectives - Objectifs du cours :

1) The estimation of the one-way Error-Component Regression Model

2) The estimation of the two-way Error-Component Regression Model

3) Panel data model with time and individual invariant regressors

4) Simultaneous equations with Error Components

5) The use SAS/IML software

Prerequisites - Pré requis :

Skills and competences needed/previously acquired:

1) The estimation of the simple and multiple regression Model for cross section data

2) The Kronecker product

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

The laptops and tablets are accepted.

The students can participate by using SAS software to apply the theoretical methods presented in the classroom

Grading system - Modalités d'évaluation :

Grading system: final exam

Bibliography/references - Bibliographie/références :

1) Baltagi B. H., (2014), Econometric Analysis of Panel Data, 5th edition, Wiley.

2) Wooldridge J. M., (2010), Econometric Analysis of Cross Section and Panel Data,

2nd edition, The MIT Press.

3) Laszlo Matyas ans Patrick Sevestre, (2008), The Econometrics of Panel data, Fundamentals and Recent Developments in Theory and Practice, Springer.

Session planning - Planification des séances :

First part of the session: theoretical presentation of the model and its estimation.

Second part of the session: Use of data set with SAS software.

Probability refresher

Course title - Intitulé du cours	Probability refresher
Level / Semester - Niveau /semestre	M2 / S1
School - Composante	TSE
Teacher - Enseignant responsable	VOLTCHKOVA_EKATERINA
Other teacher(s) - Autre(s) enseignant(s)	
Other teacher(s) - Autre(s) enseignant(s)	
Other teacher(s) - Autre(s) enseignant(s)	
Other teacher(s) - Autre(s) enseignant(s)	
Other teacher(s) - Autre(s) enseignant(s)	
Lecture Hours - Volume Horaire CM	15
TA Hours - Volume horaire TD	/
TP Hours - Volume horaire TP	/
Course Language - Langue du cours	Anglais
TA and/or TP Language - Langue des TD et/ou TP	

Teaching staff contacts - Coordonnées de l'équipe pédagogique :
ekaterina.voltchkova@tse-fr.eu office MF305

Course's Objectives - Objectifs du cours :
The purpose of this refresher course is to recall the basic notions and results of the probability theory used in probability, statistics, and econometrics courses of the M1 program.
Course content
1. Basic notions of probability: sample space, events, probability measure.
2. Examples of probability spaces, discrete probability space, combinatorial problems, counting rules.
3. Independence and conditional probability, theorem of the total probability, Bayes' theorem.
4. Random variables. Definitions and examples of discrete and absolutely continuous distributions such as Bernoulli, binomial, Poisson, uniform, exponential, normal.
5. Expectation, general moments, characteristic function.
6. Random vectors. Joint distribution, moments. Gaussian vectors.
7. Conditional distribution and expectation.

Prerequisites - Pré requis :
Basic mathematical calculus, including derivatives and integration.

Grading system - Modalités d'évaluation :
There is no grading for this refresher course.

Bibliography/references - Bibliographie/références :
Konrad Menzel: Introduction to statistical methods in economics(MIT Open Course Ware: https://ocw.mit.edu/courses/economics/14-30-introduction-to-statistical-methods-in-economics-spring-2009/),Robert B. Ash: Basic probability theory,or any other textbook on basic probability theory at your disposal.

Professional Development

Course title - Intitulé du cours	Professional Development
Level / Semester - Niveau /semestre	M2 / S1
School - Composante	Ecole d'Economie de Toulouse
Teacher - Enseignant responsable	BRIOT
Other teacher(s) - Autre(s) enseignant(s)	Sarah Haté
Other teacher(s) - Autre(s) enseignant(s)	Clare Boland
Other teacher(s) - Autre(s) enseignant(s)	Barbara Moore
Other teacher(s) - Autre(s) enseignant(s)	Delphine Bentolila
Other teacher(s) - Autre(s) enseignant(s)	Alexandra Artero
Lecture Hours - Volume Horaire CM	12
TA Hours - Volume horaire TD	0
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 :

lorna.briot@ut-capitole.fr - MA006

sarah.hate@ut-capitole.fr

clare.boland@ut-capitole.fr

barbara.moore@ut-capitole.fr

alexandra.artero@ut-capitole.fr

delphinebentolila@ut-capitole.fr

Please send an email directly to your teacher if you have any questions.

Course's Objectives - Objectifs du cours :

Building your LinkedIn profile ,assessing your personality type, your strengths and weaknesses and learning how to talk about your studies and experience is an immense challenge. The Professional development module offered to first and second year master students (in English or in French) consists of 8 sessions. The facilitator provides input, encourages oral interaction, and practical exercises to practice the skills involved to motivate and empower participants to confront the job market successfully and to find the perfect internship. The following will be covered in the module.

- Linkedin Workshop
- Self-Discovery
- Internship Strategy
- Writing a CV
- Covering letters
- Interviews
- Networking

- Career Guidance

Prerequisites - Pré requis :

All students must consult the Professional Development Moodle page before attending and bring a cv to the second class on 14th September.

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

Laptops and tablets may be used during some of the sessions, students will be informed when to bring them to class.

Participation is extremely important and will be taken into consideration for the final grade.

If students arrive late they will not be accepted and will be counted as absent.

Grading system - Modalités d'évaluation :

Professional Development is graded by a final evaluation.

Grading

- 50% - Easyrecrue Evaluation
- 25% - Professional Attitude / Participation and absences/ cv and cover letter
- 25% - Internship Strategy and Business Networking Preparation

Bibliography/references - Bibliographie/références :

All the following resources can be found on the Professional Development Moodle page :

- Cover letters
- Cv's
- E-reputation
- Linkedin
- Internship Strategy
- Interviews
- Work Environment
- Networking
- Self perception
- Skills and career opportunities
- Testimonies

Session planning - Planification des séances :

Session 1 : Linkedin and E-reputation workshop

Sessions 2 and 3: Introduction and Module Presentation / Easyrecrue / Describing oneself and one's skills / First draft of the cv / Communication Skills

Sessions 4 and 5: Debrief Easyrecrue / Professional Attitude / Expectations in the workplace / Internship Strategy/ Networking tips / Cover Letter

Session 6 and 7: Public Speaking Skills / Elevator Speech / Interview Skills / Evaluation Easyrecrue

Sessions 8 and 9: Business Networking Day Preparation / Final draft cv and cover letter/ Internship Strategy Feedback

Time series and economic forecasting

Course title - Intitulé du cours	Time series and economic forecasting
Level / Semester - Niveau /semestre	M2 / S1
School - Composante	Ecole d'Economie de Toulouse
Teacher - Enseignant responsable	CAZALS CATHERINE
Other teacher(s) - Autre(s) enseignant(s)	
Other teacher(s) - Autre(s) enseignant(s)	
Other teacher(s) - Autre(s) enseignant(s)	
Other teacher(s) - Autre(s) enseignant(s)	
Other teacher(s) - Autre(s) enseignant(s)	
Lecture Hours - Volume Horaire CM	30
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 :

catherine.cazals@tse-fr.eu. Office MF425

Preferred means of interaction: at the end of class or by appointment.

Course's Objectives - Objectifs du cours :

This course gives a presentation of main econometric models used to obtain forecasts of economic time series and to describe dynamic relations between several time series.

More precisely, we first deal with the estimation of models for univariate time series, with ARMA models (autoregressive moving average). Then we consider models for multivariate time series, with VAR (vector autoregressive) models. In this type of models, we study the concept of causality between variables (which variables are useful to forecasting others) and we are interested in the description of the response of the variables to an impulse in a given variable with the mean of the "impulse response function" (for example, in a macroeconomic model of consumption - income, we can be interested by the question: how the consumption reacts in time to a shock in income at a given period?).

The objective of this course is to acquire the skills to identify the right econometric method to deal empirically with economic time series analysis, in order to obtain forecasts and understand dynamic relations between several variables.

Prerequisites - Pré requis :

OLS and maximum likelihood estimation methods; standard statistical tests.

Grading system - Modalités d'évaluation :

empirical project and/or final exam

Bibliography/references - Bibliographie/références :

J.D. Hamilton: « Time series analysis »

H. Lutkepohl: « New introduction to multiple time series analysis »

Big Data

Course title - Intitulé du cours	Big Data
Level / Semester - Niveau /semestre	M2 / S2
School - Composante	Ecole d'Economie de Toulouse
Teacher - Enseignant responsable	Nour Meddahi
Other teacher(s) - Autre(s) enseignant(s)	
Other teacher(s) - Autre(s) enseignant(s)	
Other teacher(s) - Autre(s) enseignant(s)	
Other teacher(s) - Autre(s) enseignant(s)	
Other teacher(s) - Autre(s) enseignant(s)	
Lecture Hours - Volume Horaire CM	30
TA Hours - Volume horaire TD	
TP Hours - Volume horaire TP	
Course Language - Langue du cours	Anglais
TA and/or TP Language - Langue des TD et/ou TP	

Teaching staff contacts - Coordonnées de l'équipe pédagogique :

Nour Meddahi Email: nour.meddahi@tse-fr.eu Office: MF 417 Office hours: By appointement

Course's Objectives - Objectifs du cours :

The main goal of the course is to familiarize students with some machine learning methods for prediction and causal inference. Both supervised and non-supervised methods will be studied. In particular, the course will cover the following methods: - Lasso and Ridge Regression - Random forest and Boosting - Neural Networks and Deep Learning - Support-Vector Machines and Kernel Methods

Prerequisites - Pré requis :

First semester courses in econometrics.

Grading system - Modalités d'évaluation :

One home work (50%) and a final exam (50%).

Bibliography/references - Bibliographie/références :

Susan Athey, The Impact of Machine Learning on Economics, Working paper, 2018. James, G., D. Witten, T. Hastie, and R. Tibshirani, An Introduction to Statistical Learning, Springer, 2013. Efron, B. and T. Hastie, Computer Age Statistical Inference, Cambridge University Press Hastie, T., R. Tibshirani, and J. Friedman, The Elements of Statistical Learning, Springer, 2016 Goodefellow, I., Y. Bengio and A. Courville, Deep Learning, MIT Press, 2016. J. and M. Watson: Introduction to Econometrics, Addison Wesley. Panel Data: Arellano, M.: Panel Data Econometrics, Oxford University Press. Wooldridge, J.: Econometric Analysis of Cross Section and Panel Data, MIT Press

Econometrics approach to Efficiency Analysis

Course title - Intitulé du cours	Econometrics approach to Efficiency Analysis
Level / Semester - Niveau /semestre	M2 / S2
School - Composante	Ecole d'Economie de Toulouse
Teacher - Enseignant responsable	CAZALS CATHERINE
Other teacher(s) - Autre(s) enseignant(s)	
Other teacher(s) - Autre(s) enseignant(s)	
Other teacher(s) - Autre(s) enseignant(s)	
Other teacher(s) - Autre(s) enseignant(s)	
Other teacher(s) - Autre(s) enseignant(s)	
Lecture Hours - Volume Horaire CM	15
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 :

catherine.cazals@tse-fr.eu

MF 425

Preferred means of interaction: by email or by appointment

Course's Objectives - Objectifs du cours :

Efficiency analysis deals with the issue of the performance of productive units (benchmarking analysis) and is a very important tool for firms and any decision-making units with application in almost all economic sectors (banks, industries, education, health, …). The aim is to estimate a frontier from observed quantities (production, cost, profit …) and to derive some relative inefficiency scores for a set of productive units, as the departure to this frontier. Different approaches may be used. We can assume a particular functional form for the frontier and then we adopt a "parametric" approach, or we can use a "nonparametric" approach. We can assume that all departure from the frontier is due to inefficiency ("deterministic" approach), or we can assume that the departure is due to inefficiency and also some random noise and then we deal with a "stochastic" approach. Within these approaches different refinements about assumptions on various components in the models can be found but the two main families of efficiency analysis are the "deterministic nonparametric" approach, with mainly Data Envelopment Analysis (DEA) and Full Disposal Hull (FDH) methods, and the "stochastic parametric approach" (Stochastic Frontier Analysis, SFA).

The course gives analytical and econometric tools to be able to perform an efficiency analysis in any economic sector.

Prerequisites - Pré requis :

No

Grading system - Modalités d'évaluation :

Empirical project

Bibliography/references - Bibliographie/références :

Coelli T.J., Rao D.S.P, O'Donnell C.J and Battese G.E. (2005) : "An Introduction to Efficiency and Productivity Analysis", Springer.

Kumbhakar S.C. and Lovell C.A.K. (2000) : "Stochastic Frontier Analysis", Cambridge University Press.

Cooper W.W., Seiford L.M. and Zhu J. (2011) : "Handbook on Data Envelopment Analysis", Springer

Econometrics of Program Evaluation

Course title - Intitulé du cours	Econometrics of Program Evaluation
Level / Semester - Niveau /semestre	M2 / S2
School - Composante	Ecole d'Economie de Toulouse
Teacher - Enseignant responsable	Jacint ENRICH-MOYA
Other teacher(s) - Autre(s) enseignant(s)	
Other teacher(s) - Autre(s) enseignant(s)	
Other teacher(s) - Autre(s) enseignant(s)	
Other teacher(s) - Autre(s) enseignant(s)	
Other teacher(s) - Autre(s) enseignant(s)	
Lecture Hours - Volume Horaire CM	30
TA Hours - Volume horaire TD	
TP Hours - Volume horaire TP	
Course Language - Langue du cours	Anglais
TA and/or TP Language - Langue des TD et/ou TP	

Teaching staff contacts - Coordonnées de l'équipe pédagogique :

E-mail address: jacint.enrich-moya@ut-capitole.fr - Office number: MF 007

Office(s) hours/day(s) of the week when students can drop by: Wednesday, 9.30-12.30

Preferred means of interaction: Questions that can be of general interest (comprehension, etc.) are to be raised preferentially in class or after class. Interactions by email or during office hours are dedicated to more specific questions (assignment, general comments about the course,...).

Course's Objectives - Objectifs du cours :

This course covers the basic theoretical knowledge and technical skills required for implementing microeconometric methods of estimation of causal or treatment effects.

The class will be structured in three broad sequences:

1/ The two fundamental problems of inference

1.1/ The fundamental problem of causal inference

1.2/ The fundamental problem of statistical inference

2/ Methods of causal inference

2.1/ Randomized Controlled Trials

2.1.1/ 4 designs: Brute Force, After self-selection, Eligibility, Encouragement

2.1.2/ Power analysis

2.2/ Natural Experiments (RDD, DID, IV)

2.3/ Observational methods (OLS, Matching)

3/ Additional notions

3.1/ Placebo tests

3.2/ Clustered and Stratified Designs

3.3/ Diffusion effects Goals of the class: - Understanding of the basic language to encode causality, - knowledge of the fundamental problems of inference and the biases of intuitive estimators, - understanding of how econometric methods recover treatment effects, - ability to compute these estimators along with an estimate of their precision using the statistical software R.

The students are not expected to know how to reproduce the mathematical derivations of the various results seen in class.

Prerequisites - Pré requis :

Students are expected to master the basic notions of statistical inference (population, sample, OLS, IV, unbiasedness, consistency, estimation of standard errors, testing, probit and logit). Therefore, some Econometrics training is required. M1 Intermediate Econometrics is a good benchmark for what is needed. Basic knowledge of how to implement these estimators with R is highly recommended. Knowledge of nonparametric estimation techniques (e.g. kernel estimation) is a plus (some estimators covered in class are nonparametric, even though we cover first their parametric forebears). Knowledge of Rstudio and Latex is a plus. Obviously, having taken the Program Evaluation class in M1 is a plus. For each notion, we will go further than the introduction done in the M1 class.

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

I expect students to show up in class. All slides will be posted in advance along with lecture notes, but class interaction is crucial, for me to understand where students have problems and for students to have these problems solved. Also, I expect a lot of participation from students, especially around the exercises and the applied project. Laptops and tablets are accepted, but I reserve the option of reversing that authorization if attention in class falters.

Grading system - Modalités d'évaluation :

Evaluation will be made of three parts: report (10/20), oral presentation (7/20) and class participation (3/20). Students will work by groups of 3 or 4 at reproducing the results of a published paper using the same methodology AND an alternative methodology studied in class AND performing a power analysis AND a placebo test. Students will provide a report detailing their analysis and the code using the software R, so that the route to the results is apparent. In the report, I expect students to show their mastery of the basic skills learned in class (definition of treatment effects, understanding of confounding factors and sampling noise, understanding of estimation methods). Students will present their results orally in a 20 min session followed by 10 min of questions. They are expected to explain the goals of their work, the main results and the methods used to reach them. I expect students to be clear and focused on the main notions and results. Participation will be graded based on the following

metric: - not showing up to 2 classes w/o sending an email of explanation when not there: -1 - showing up to every class (sending an email of explanation when not there is expected): 0 - showing up + participation: (1 to 3 depending on the intensity) Project cooperation (vs competition) among groups will also be rewarded. Of course, cooperation doesn't mean cheating, which will be highly penalized.

Bibliography/references - Bibliographie/références :

There will be no textbook assigned for this class. Angrist and Pischke's two books "Mostly Harmless Econometrics" and "Mastering 'Metrics" cover a lot of the notions seen in class in a fun and interesting way. Most of the notions seen in class have been presented in Handbook chapters or review articles. Here are the most useful ones that will be uploaded on the Moodle webpage of the class:

- John DiNardo and David Lee, "Program Evaluation and Research Designs," in Handbook of Labor Economics, ed. by Orley Ashenfelter and David Card, 4a:463-536, Elsevier, 2011.
- Petra Todd, "Evaluating Social Programs with Endogenous Program Placement and Selection of the Treated," in Handbook of Development Economics, ed. by T. Paul Schultz and John A. Strauss, 4(60):3847-3894, Elsevier, 2007.
- Guido Imbens and Jeffrey Wooldridge, "Recent Developments in the Econometrics of Program Evaluation," Journal of Economic Literature, 47(1):5-86, 2009.
- Josh Angrist and Alan Krueger, "Empirical Strategies in Labor Economics," in Handbook of Labor Economics, ed. by Orley Ashenfelter and David Card, 3:1277-1366, Elsevier, 1999.
- Jim Heckman, Rob LaLonde and Jeff Smith, "The Economics and Econometrics of Active Labor Market Programs," in Handbook of Labor Economics, ed. by Orley Ashenfelter and David Card, 3:1865-2097, Elsevier, 1999.
- Esther Duflo, Rachel Glennester and Michael Kremer, "Using Randomization in Development Economics Research: A Toolkit," in Handbook of Development Economics, ed. by T. Paul Schultz and John A. Strauss, 4(60):3895-3962, Elsevier, 2007.
- Guido Imbens, "Nonparametric Estimation of Average Treatment Effects Under Exogeneity: A Review," Review of Economics and Statistics, 86:4-29, 2004.
- Guido Imbens and Thomas Lemieux, "Regression Discontinuity Designs: A Guide to Practice," Journal of Econometrics, 142:615-635, 2008. There are excellent blogs, websites and twitter accounts on the topic of causal inference and program evaluation. Here are the blogs and websites that I like the most:
- http://blogs.worldbank.org/impactevaluations/blog
- http://andrewgelman.com/
- http://freakonometrics.hypotheses.org/
- http://chrisblattman.com/
- https://www.povertyactionlab.org/
- http://www.g-feed.com/
- https://energyathaas.wordpress.com/
- https://epic.uchicago.edu/

Session planning - Planification des séances :

In class, all the notions and estimators will be introduced using a numerical example. The R code used to generate the results presented in class will be uploaded before on the moodle webpage of the class, as well as the slides of the class and a document we will use to extend and explain them. At the end of each class, a set of exercises based on the generated data will help the students reproduce the main notions seen in class with the generated data. The exercises are not part of the evaluation.

Empirical Industrial Organization

Course title - Intitulé du cours	Empirical Industrial Organization
Level / Semester - Niveau /semestre	M2 / S2
School - Composante	Ecole d'Economie de Toulouse
Teacher - Enseignant responsable	DUBOIS - BONTEMPS
Other teacher(s) - Autre(s) enseignant(s)	
Other teacher(s) - Autre(s) enseignant(s)	
Other teacher(s) - Autre(s) enseignant(s)	
Other teacher(s) - Autre(s) enseignant(s)	
Other teacher(s) - Autre(s) enseignant(s)	
Lecture Hours - Volume Horaire CM	30
TA Hours - Volume horaire TD	0
TP Hours - Volume horaire TP	0
Course Language - Langue du cours	Anglais
TA and/or TP Language - Langue des TD et/ou TP	

Teaching staff contacts - Coordonnées de l'équipe pédagogique :

Christian Bontemps (MF407), email: christian.bontemps@tse-fr.eu , Office hours to be determined. Preferred mean of interaction: meeting by appointment. Pr. Bontemps teaches the second part.

Pierre Dubois (MF413), email: pierre.dubois@tse-fr.eu , Office hours to be determined. Preferred mean of interaction: meeting by appointment. Pr. Dubois teaches the first part.

Course's Objectives - Objectifs du cours :

In this course of Empirical Industrial Organization, we aim to familiarize students with the structural econometric methodologies used in empirical industrial organization. At the end of the course, students are expected to have a solid grounding in understanding the structure of markets, the strategic behavior of firms, as thus know how to estimate with an econometric software and interpret the results in an empirical study, how to provide constructive criticism, and how to carry out an empirical research project.

The course will be devoted to the study of demand modeling in IO and their applications, to the estimation of production function, to the analysis of structural estimation of auction models, to regulation, asymmetric information models and entry models. Beyond academic careers, there are clear policy issues (on anti-trust and regulation) and commercial implications (reflected by the growing economics consulting sector, which is based primarily around IO issues including pricing and competitive analysis). In addition to the economics discipline, estimating demand, understanding product positioning, pricing, the communication, gathering and use of product information, merger analysis, reputation and the other topics that we cover are central concerns in the literatures on marketing, strategy and information systems.

The course will consist of two parts:

Part I: Demand modeling in IO and applications, taught by Pierre Dubois

Part II: Five applied Topics in IO (entry models, productivity and production function, cost frontier estimations, estimation of auction models, models of regulation) taught by Christian Bontemps

Prerequisites - Pré requis :

Knowledge of linear and non linear econometric methods, generalized method of moments is required. To perform the assignments, you will need to use Matlab, R or Stata or other econometric software. R will be used in the second part with C. Bontemps.

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

On time attendance is expected.

Grading system - Modalités d'évaluation :

There are several kinds of tasks you'll have to do:

1. There will be assigned readings for each class, marked with one asterisk (*). We strongly recommend you to do the readings before class, as it will allow you to understand the material better. In some lectures you will be asked to prepare a brief summary of the paper (5 slides).

2. The class will have small problem sets due at the end of the sequence and two small research projects (one for each part) that determine the grades. You are encouraged to collaborate with your classmates for these works. You'll have the opportunity to discuss progress during office hours.

Bibliography/references - Bibliographie/références :

Part I. Demand for differentiated products and IO applications

1. Differentiated products demand

1.1. Theory and estimation on micro data Hausman J., G. Leonard, and D. Zona (1994) "Competitive Analysis with Differentiated Products" Annales d'Économie et de Statistique, 34, 159-180 McFadden D. and K. Train (2000) "Mixed MNL Models for Discrete Response" Journal of Applied Econometrics, 15, 5, 447-470. Train K. (2009) Discrete Choice Methods with Simulation, Cambridge University Press

1.2. Theory and estimation on aggregate data (*) Berry, S. T. (1994) "Estimating discrete-choice models of product differentiation", RAND Journal of Economics, 25, 2, 242-262 (*) Berry S. T., J. Levinsohn, and A. Pakes (1995) "Automobile prices in market equilibrium", Econometrica, 63, 4, 841-890 Nevo, A. (2000) "A practitioner's guide to estimation of random coefficients logit models of demand", Journal of Economics & Management Strategy, 9, 4, 513-548 Petrin A. and K. Train (2010) "A Control Function Approach to Endogeneity in Consumer Choice Models" Journal of Marketing Research, 47, 1, 3-13

2. Measuring market power and merger analysis

2.1 Market power estimation (*) Nevo, A. (2001) "Measuring Market Power in the Ready-to-Eat Cereal Industry", Econometrica, 69(2), 307-342 2.2. Merger analysis and simulation (*) Nevo, A. (2000) "Mergers with Differentiated Products: the Case of the Ready-to-Eat Cereal Industry", RAND Journal of Economics, 31, 395-421. Gowrisankaran, G., A. Nevo, and R. Town (2015) "Mergers When Prices Are

Negotiated: Evidence from the Hospital Industry" American Economic Review, 105(1): 172-203 Björnerstedt J. and F. Verboven (2015) "Does Merger Simulation Work? Evidence from the Swedish Analgesics Market", American Economic Journal: Applied Economics, forthcoming. Houde, J.-F. (2012) "Spatial Differentiation and Vertical Mergers in Retail Markets for Gasoline" American Economic Review, 102(5): 2147-82.

3. Measuring consumer welfare Trajtenberg M. (1989) "The Welfare Analysis of Product Innovations, with an Application to Computed Tomography Scanners" Journal of Political Economy, 97, 2, 444-479 (*) Petrin (2002) "Quantifying the Benefits of New Products: The Case of the Minivan," Journal of Political Economy, 110:705-729 Dubois P., R. Griffith, M. O'Connell (2014) "The Effects of Banning Advertising in Junk Food Markets" TSE Working Paper n° 16-647

4. Identifying contracts in vertical relations (*) Bonnet C. and P. Dubois (2010) "Inference on Vertical Contracts between Manufacturers and Retailers Allowing for Non Linear Pricing and Resale Price Maintenance" RAND Journal of Economics, 41, 1, 139-164 Bonnet C. and P. Dubois (2014) "Identifying Non Linear Pricing in Vertical Contracts: Empirical Estimation on Food Retailing in France" Villas-Boas, S. B. (2007) "Vertical Relationships between Manufacturers and Retailers: Inference with Limited Data," Review of Economic Studies, 74, 2, 625-652 (**) Nurski L. and F. Verboven (2013) "Exclusive Dealing as an Entry Barrier - Evidence from the Car Market" forthcoming Review of Economic Studies, 2015

5. Identifying margins with price discrimination or price constraints Dubois P. and L. Lasio (2014) "Identifying Industry Margins with Unobserved Price Constraints: Structural Estimation on Pharmaceuticals" TSE Working Paper n° 14-471 D'Haultfoeuille X., Durrmeyer I., P. Février, (2014) "Automobile Prices in Market Equilibrium with Unobserved Price Discrimination" (*) Grennan, M. (2013), "Price discrimination and bargaining: Empirical evidence from medical devices", American Economic Review 103(1), 145--177.

6. Consumer demand with limited information and advertising (*) Ackerberg, D. (2001) "Empirically distinguishing informative and prestige effects of advertising" Rand Journal of Economics 32 (2), 316-333. Ackerberg, D. (2003) "Advertising, learning, and consumer choice in experience good markets: An empirical examination" International Economic Review 44 (3), 1007 - 1040. Sovinsky-Goeree, M. (2008) "Limited information and advertising in the us personal computer industry" Econometrica 76 (5), 1017-1074. Erdem T., Keane MP (1996) "Decision-making under uncertainty: Capturing dynamic brand choice processes in turbulent consumer goods markets" Marketing Science. 15(1):1--20 Anderson, S., F. Ciliberto, J. Liaukonyte, and R. Renault (2012) "Push-me pull-you: Comparative advertising in the OTC analgesics industry" CEPR Discussion Paper 898, forthcoming in the Rand Journal of Economics

7. Applications on Industry and Trade Berry S. T., J. Levinsohn, and A. Pakes (1999) "Voluntary Export Restraints on Automobiles: Evaluating a Trade Policy" American Economic Review, 89, 3, 400-430 (*) Goldberg, P.K. (1995) "Product Differentiation and Oligopoly in International Markets: The Case of the U.S. Automobile Industry", Econometrica, 63, 891-951. Goldberg, P.K. and R. Hellerstein (2013) "A Structural Approach to Identifying the Sources of Local-Currency Price Stability", Review of Economic Studies, 80(1), 175-210. Bonnet C., P. Dubois, S.B. Villas Boas, D. Klapper (2013) "Empirical Evidence on the Role of Non Linear Wholesale Pricing and Vertical Restraints on Cost Pass-Through", Review of Economics and Statistics 95:2 500--515.

8. Discrete/continuous Demand Models Dubin, J.A. and D.L. McFadden (1984) "An econometric analysis of residential electric appliance holdings and consumption", Econometrica, 52 (2) 345-362 (*) Dubois P. R. Griffith and A. Nevo (2014) "Do Prices and Attributes Explain International Differences in Food Purchases" American Economic Review 104(3), 832-67 (*) Hanemann, W.M. (1984) "Discrete / Continuous models of consumer demand", Econometrica, 52(3), 541-561 Hendel I. (1999) "Estimating Multiple-Discrete Choice Models: An Application to Computerization Returns", Review of Economic Studies, 423-446. Dubois P. and S. Jodar-Rosell (2010) "Price and Brand Competition Between Differentiated Retailers: A Structural Econometric Model", CEPR Discussion Paper 7847 Smith, H. (2004) "Supermarket choice and supermarket competition in market equilibrium", Review of Economic Studies, vol. 71 (1),.235-263

9. Dynamic Demand Hendel I. and A. Nevo (2006) "Measuring the Implications of Sales and Consumer Inventory Behavior" Econometrica, 74(6), 1637-73. (*) Hendel I. and A. Nevo (2006) "Sales and Consumer Inventory" Rand Journal of Economics, Fall 2006 Hendel I. and A. Nevo (2013) "Intertemporal Price Discrimination in Storable Goods Markets", American Economic Review 103(7), 2722-51. Perrone H. (2014) "Inventories, Unobservable Heterogeneity and Long Run Price Elasticities" Nevo A., J. Turner and J. Williams (2014) "Usage-Based Pricing and Demand for Residential Broadband" forthcoming Econometrica

Part II

Topic 1 - Entry models (*)Berry, S. (1992), “Estimation of a Model of Entry in the Airline Industry”, Econometrica, 60, 889-918. Bresnahan, T. and P. Reiss (1991), “Entry and Competition in Concentrated Markets”, Journal of Political Economy, 99, 977-1009. (*)Bresnahan, T. and P. Reiss (1990), “Entry in Monopoly Markets”, Review of Economic Studies, 57, 531-553. Cleeren, K., Verboven, F., Deekimpe, M.G., Gielens, K. (2010), “Intra- and Inter- Format Competition Among Discounters and Supermarkets”, Marketing Science, 29, 456-473. (*)Mazzeo, M.J. (2002), “Product Choice and Oligopoly Market Structure”, Rand Journal of Economics, 33, 221-242. Seim, K. (2006), “An Empirical Model of Firm Entry with Endogenous Product-type Choices”, Rand Journal of Economics, 37, 619-640.

Topic 2 - Productivity and production functions (*)Blundell, R., and S. Bond (2000), “GMM Estimation with persistent panel data: an application to production functions”, Econometric Reviews, 19:3, 321-340 Christensen, L.R., D.W. Jorgenson and L.J. Lau (1971), “Conjugate Duality and the Transcendental Logarithmic Production Function”, Econometrica, 39, 255-256. Diewert, W.E. (1971), “An Application of The Shephard Duality Theorem: A Generalized Leontief Production Function”, Journal of Political Economy, 79, 481-507. Greene, W. P (1997), “Frontier production functions” in Handbook of applied econometrics. (*)Levinsohn, J., and A. Petrin (2003), “Estimating Production Functions Using Inputs to Control for Unobservables”, Review of Economic Studies, 70, 317-342. (*)Olley, G. Steven, and Ariel Pakes (1996), “The Dynamics of Productivity in the Telecommunications Equipment Industry”,Econometrica, 64, 1263-1297.

Topic 3 - Cost and production frontiers (*)Aigner, C. A. K. Lovell, and P. Schmidt, “Formulation and estimation of stochastic frontier production function models,” Journal of Econometrics, 6, 21–37, 1977. (*)Meeusen and J. van den Broeck, “Efficiency estimation from Cobb-Douglas production functions with composed error”, International Economic Review, vol. 18, no. 2, pp. 435–444, 1977. S. C. Kumbhakar and C. A. K. Lovell, Stochastic Frontier Analysis, Cambridge University Press,Cambridge, UK, 2000. S. C. Kumbhakar and E. G. Tsionas, “Estimation of stochastic frontier production functions

with input-oriented technical efficiency," Journal of Econometrics, vol. 133, no. 1, pp. 71–96, 2006. Schmidt P. (1984), "An error structure for system of translog cost and share equations'", Department of Economics, Michigan State University. (*)Schmidt P. and C.A.K. Lovell (1979), "Estimating technical and allocative inefficiency relative to stochastic production and cost frontiers", Journal of Econometrics, 9, 343-366.

Topic 4 - Empirical models of auctions Athey, S., and P. Haile (2002): "Identification of Standard Auction Models", Econometrica, 70, 2107-2140. (*)Guerre, E., I. Perrigne and Q. Vuong, 2000, "Optimal Nonparametric Estimation of FirstPrice Auctions", Econometrica, 68, 525-574. (*)Haile, P., and E. Tamer (2003), "Inference with an Incomplete Model of English Auctions", Journal of Political Economy, 111, 1-51. Hendricks, K., J. Pinkse, and R. Porter (2003), "Empirical Implications of Equilibrium Bidding in First-Price, Symmetric, Common-Value Auctions", Review of Economic Studies, 70, 115-145. Laffont, J. J. (1997), "Game Theory and Empirical Economics: the Case of Auction Data", European Economic Review, 1-36. Laffont, J. J., and Q. Vuong (1996), "Structural Analysis of Auction Data", American Economic Review, Papers and Proceedings, 86, 414-420. Li, T., I. Perrigne, and Q. Vuong (2000), "Conditionally Independent Private Information in OCS Wildcat Auctions", Journal of Econometrics, 98, 129-161. (*)Li, T., I. Perrigne, and Q. Vuong (2002), "Structural Estimation of the Affiliated Private Value Auction Model", RAND Journal of Economics, 33, 171-193.

Topic 5 - Empirical models of regulation (*)Gagnepain, P. and M. Ivaldi (2002), "Incentive Regulatory Policies: The Case of Public Transit Systems in France", RAND Journal of Economics, 33:4, 605-629. Gagnepain, P., M. Ivaldi and D. Martimort (2013), "The Cost of Contract Renegotiation: Evidence from the Local Public Sector", American Economic Review, 103, 2352-2383. Miravete, E. J. and Lars-Hendrik Röller (2004), "Estimating Markups under Nonlinear Pricing Competition", Journal of the European Economic Association, 2, 526-535. (*)Miravete, E. J. (2002), "Estimating Demand for Local Telephone Service with Asymmetric Information and Optimal Calling Plans", The Review of Economic Studies, 69, 943–971. Perrigne I. and Q. Vuong, (2011) "Nonparametric Identification of a Contract Model With Adverse Selection and Moral Hazard", Econometrica, 79, 1499–1539. (*)Wolak F. (1994), "An Econometric Analysis of the Asymmetric Information, Regulator-Utility Interaction", Annales d'Economie et de Statistique, 1994, 13-69.

Experimental Economics

Course title - Intitulé du cours	Experimental Economics
Level / Semester - Niveau /semestre	M2 / S2
School - Composante	Ecole d'Economie de Toulouse
Teacher - Enseignant responsable	Olivier ARMENTIER
Lecture Hours - Volume Horaire CM	15
TA Hours - Volume horaire TD	
TP Hours - Volume horaire TP	
Course Language - Langue du cours	Anglais
TA and/or TP Language - Langue des TD et/ou TP	

Teaching staff contacts - Coordonnées de l'équipe pédagogique :

n/a

Course's Objectives - Objectifs du cours :

This course will provide a comprehensive overview of experimental methods in economics. At the end of the course, students should know all the steps necessary to conduct an effective experiment, from setting an appropriate research question, to designing the experiment, and analyzing the data. Illustrations from the experimental literature will be provided.

The course should be of interest to students who are interested in running their own experiments and to students who want to understand experimental methods so has to read the experimental literature from a critical perspective.

Prerequisites - Pré requis :

n/a

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

n/a

Grading system - Modalités d'évaluation :

Grades will be determined based on class participation and a research project.

Bibliography/references - Bibliographie/références :

n/a

Financial econometrics

Course title - Intitulé du cours	Financial econometrics
Level / Semester - Niveau /semestre	M2 / S2
School - Composante	Ecole d'Economie de Toulouse
Teacher - Enseignant responsable	Nour Meddahi
Other teacher(s) - Autre(s) enseignant(s)	
Other teacher(s) - Autre(s) enseignant(s)	
Other teacher(s) - Autre(s) enseignant(s)	
Other teacher(s) - Autre(s) enseignant(s)	
Other teacher(s) - Autre(s) enseignant(s)	
Lecture Hours - Volume Horaire CM	30
TA Hours - Volume horaire TD	
TP Hours - Volume horaire TP	
Course Language - Langue du cours	Anglais
TA and/or TP Language - Langue des TD et/ou TP	

Teaching staff contacts - Coordonnées de l'équipe pédagogique :

Nour Meddahi Email: nour.meddahi@tse-fr.eu Office: MF 417 Office hours: By appointement

Course's Objectives - Objectifs du cours :

The main goal of the course is to familiarize students with modeling, estimating and forecasting financial time series models. Course outline: During the 10 weeks of lectures, we will cover different topics. - Introduction to Financial Econometrics - Predictability of Asset Returns - Volatility Models - Financial Risk Management: Value-at-Risk, Expected Shortfall, and Systemic Risk Models - Dynamic Term Structure of Interest Rates - Econometric Analysis of Option Pricing Models - High Frequency Data - Event-Study Analysis - Factor Models - CCAPM

Prerequisites - Pré requis :

Econometrics and Time Series

Grading system - Modalités d'évaluation :

Two home works (25% each) and a final exam (50%)

Bibliography/references - Bibliographie/références :

Campbell, J. Y., A. Lo and A. C. MacKinlay, The Econometrics of Financial Markets, Princeton University Press, 1997. Christoffersen, P. F., Elements of Financial Risk Management, Academic Press, 2003. Cochrane, J., Asset Pricing, Princeton University Press, 2001. Gourieroux, C. and J. Jasiak, Financial Econometrics: Problems, Models, and Methods, Princeton University Press, 2001. Singleton, K. J., Empirical Dynamic Asset Pricing: Model Specification and Econometric Assessment, Princeton University Press, 2006. Taylor, S. J., Asset Price Dynamics, Volatility, and Prediction, Princeton

University Press, 2005. Tsay, R. S., Analysis of Financial Time Series, Wiley, 2002. Wesley. Panel Data: Arellano, M.: Panel Data Econometrics, Oxford University Press. Wooldridge, J.: Econometric Analysis of Cross Section and Panel Data, MIT Press

Health Econometrics

Course title - Intitulé du cours	Health Econometrics
Level / Semester - Niveau /semestre	M2 / S2
School - Composante	Ecole d'Economie de Toulouse
Teacher - Enseignant responsable	GRAMAIN AGNES
Other teacher(s) - Autre(s) enseignant(s)	
Other teacher(s) - Autre(s) enseignant(s)	
Other teacher(s) - Autre(s) enseignant(s)	
Other teacher(s) - Autre(s) enseignant(s)	
Other teacher(s) - Autre(s) enseignant(s)	
Lecture Hours - Volume Horaire CM	15
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	

Teaching staff contacts - Coordonnées de l'équipe pédagogique :

Classes hours will be concentrated on one week. During this week, I will be in Toulouse and interactions with students will be possible before or after classes or through specific appointment. Afterwards, they will be restricted to email.

Course's Objectives - Objectifs du cours :

The health care sector suffers from a critical need for quantitative analysis. A lot of individual level data are now available but analyzing these data supposes to combine a good understanding of data production in the health sector (declaring health behaviors or conditions, regulation constraint embedded in administrative dataset…) and of economic behavior regarding health and health care.

The emphasis of the course is on the use of individual level data. We will analyse scientific articles dealing with the major problems encountered in applied health econometrics: endogeneity, distributions with a large mass point at 0, selection and unobserved individual heterogeneity, latent variables, endogeneous interactions …Several types of models will be reviewed: two-part models, selection models, panel data models, game models…

Objectives of the course

- awareness of health data specificity and peculiarity

- deeper knowledge of some micro-econometric models and methods used as a solution for theoretical and empirical problems in Health economics

- capacity to produce a critical reading of applied papers in health economics and related areas

Prerequisites - Pré requis :

No specific skill in heath economics is needed to take advantage of this course. But students have to be familiar with econometric models, from a theoretical point of view, since we will focus attention on the connection between data characterization and the choice of an econometric model to apply.

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

Students will have to read some articles on their own. These articles will then be discussed during classes. The teaching mode will be adapted to the number of students.

Grading system - Modalités d'évaluation :

The final exam consist in a written critical presentation of a published paper which has been discussed during the session.

List of articles for the evaluation

Choose one article and write an analytical note on it for your colleagues

1. Clark Andrew E., Vicard Augustin (2007) « Conditions de collecte et santé subjective : une analyse sur données européennes », Economie et statistique, n°403-404, Santé, vieillissement et retraite en Europe. pp. 143-163.
2. Carter Grace M., Newhouse Joseph P. and Relles, Daniel A. (1990), "How much change in the case mix index is DRG creep?", Journal of Health Economics, 9, pp. 411-428.
3. Buntin Melinda, Zaslavsky Alan M. (2004), "Too much ado about two-part models and transformation? Comparing methods of modeling Medicare expenditures", Journal of Health Economics, 23(3), pp. 525-542.
4. Manning et al. (1987), "health insurance and the demand for medical care: evidence from a randomized experiment", AER, 77(3), pp. 251-277
5. Lindeboom and Kerkhofs (2009), "Health and Work of the Elderly: Subjective Health Measures, Reporting Errors and Endogeneity in the Relationship between Health and Work", journal of applied econometrics, 24(6), pp. 1024-1046
6. Yang Muzhe, Lien Hsien-Ming And Chou Shin-Yi (2014), "Is There A Physician Peer Effect? Evidence From New Drug Prescriptions", Economic Inquiry, 52(1), pp. 116–13
7. Lamichhanea Dirga K., Mangyob Eiji (2011), "Water accessibility and child health: Use of the leave-out strategy of instruments", Journal of Health Economics, 30, pp. 1000– 1010

Deadline : march the 13rd, 2018