ÉCOLE
NORMALE
SUPÉRIEURE
DE LYON

ACADEMIC PROGRAM

Master Advanced Economics

UNIVERSITÉ DE LYON

ENS DE LYON

Master 1 Advanced Economics

Semestre 1

Unités d'enseignement	Libellés enseignements	Nombre de crédits
UE 1A	**Microeconomics and macroeconomics**	**8**
	ECO4101 : Macroeconomics 1	4
	ECO4103 : Microeconomics 1	4
UE 1B	**Quantitative methods**	**12**
	ECO4104 : Econometrics 1	4
	ECO4105 : Econometrics 2	4
	ECO4106 : Mathématiques 1	4
UE 1C	**Applied economics and elective courses**	**9**
	ECO4108 : Natural Resource Economics	3
	ECO4107 : Gender Economics	3
	ECO4109 : Introduction au droit public et constitutionnel (ou cours au choix, non géré par le département d'économie)	3
UE 1D	**Langues**	**3**
	Cours au choix, non géré par le département d'économie	3

Semestre 2

Unités d'enseignement	Libellés enseignements	Nombre de crédits
UE 2A	**Microeconomics & macroeconomics**	**6**
	ECO4201 : Microeconomics 2	3
	ECO4203: Quantitative Economic History	3
UE 2B	**Methods and tools**	**8**
	ECO4204 : Econometrics 3	4
	ECO4206 : Mathématiques 2	4
UE 2C	**Applied economics**	**6**
	ECO4207 : Economic Geography	3
	ECO4208 : Public Economics	3
UE 2D	**Elective courses**	**6**
	Langues, cours au choix , non géré par le département d'économie (selon MCC du centre de langues)	3
	ECO4210 : Droit public européen et international (ou cours au choix, non géré par le département d'économie (selon MCC du cours choisi)	3
UE 2E	**Vocational Training**	**2**
	ZZTD9001 : Vocational training	2

Master 2 Advanced Economics

Semestre 1

Unités d'enseignement	Libellés enseignements	Nombre de crédits
UE 1A	**Core courses**	**10**
	ECO5106 : Topics in Econometrics	5
	ECO5108 : Machine Learning and Spatial Data Analysis	5
UE 1B	**Specialization courses**	**12**
	ECO5111 : Behavioral Economics	4
	ECO5107 : Topics in Microeconomics	4
	ECO5001 : Information economics	4
	ECO5101: Data task (option)	0

Semestre 2

Unités d'enseignement	Libellés enseignements	Nombre de crédits
UE 2A	**Research workgroups**	**12**
	ECO5203 : Topics in financial macroeconomics	4
	ECO5002 : Topics in economic history	4
	ECO5202 : Development	4
UE 2B	**Master thesis and seminars**	**26**
	ECO5201 : Thesis Seminar	2
	ZZTD9000: Master Thesis	24

SYLLABUS

UNIVERSITÉ DE LYON

ENS DE LYON

Introduction à la Macroéconomie

Professeurs :
Guillaume Coqueret, coqueret@em-lyon.com;

- **Vue d'ensemble s objectifs**

Le cours propose une introduction formalisée à la macroéconomie. Après une introduction basée sur un rappel des tendances empiriques de long terme, nous présenterons les modèles historiques de la croissance tels que ceux de Solow et Ramsey sont tout d'abord étudiés (hypothèses, points d'équilibre et propriétés). Nous couvrons ensuite quelques extensions importantes (capital humain, technologie) avant couvrir d'autres sujets, comme les cycles financiers et la politique monétaire. Le cours alterne les parties théoriques et les illustrations et applications pratiques (données de la Banque Mondiale et simulations notamment).

L'objectif est donc d'introduire les notions de bases essentielles en macroéconomie, à la fois à travers le prisme des modèles théoriques et via l'exploration des données qui s'y rapportent notamment pour valider (ou infirmer) la pertinence des modèles étudiés.

- **Prérequis**

Le cours s'appuiera sur des notions d'optimisation (Lagrangien, conditions du premier ordre, Hamiltonien.). Des bases en programmation aideraient les élèves à mieux cerner le code utilisé.

- **Informations pratiques**

Le cours se déroulera sous la forme de sessions de deux heures chacune environ :

1. Introduction, données et faits stylisés fondamentaux
2. Le modèle de Solow et ses extensions
3. Le modèle de Ramsey
4. Économies ouvertes
5. Capital humain
6. Progrès technique
7. Croissance en coupe transversale de pays
8. Modèles à générations imbriquées
9. Théorie de la croissance unifiée
10. Simulations
11. Fluctuations
12. Chômage
13. Économie financière
14. Démographie (séance bonus)

- **Évaluation**

L'évaluation se fera sous forme d'un devoir sur table de deux heures à la fin du cours (50%), d'un projet personnel (40%) et de participation orale (10%).

- **Bibliographie**

- Barro, Robert, and Xavier Sala-i-Martin. *Economic growth.*, MIT Press, 2004 (Second edition).
- Campante, Filipe, Federico Sturzenegger, and Andrés Velasco. *Advanced macroeconomics: an easy guide*. LSE Press, 2021.

Advanced Microeconomics: Game Theory

Prerequisite

The main prerequisite for this course is an understanding of microeconomics. Familiarity with calculus is also helpful. The most important prerequisite, however, is a degree of comfort with rigorous reasoning and arguments.

Exams

The midterm exam will be held in class. The final exam will be scheduled by the registrar during the final exam period.

Course Readings

- *A Course in Game Theory* by Osborne and Rubinstein,
- *Microeconomic Theory* by Andreu Mas-Colell, Michael D. Whinston, and Jerry R. Green
- Miscellaneous academic journals.

Course Outline

Part 1: Simultaneous Game

1. Simultaneous Games with Complete Information

1. Basic Definitions
2. Rationality and Equilibria

3. Existence of Nash Equilibria
4. Economic Examples

2. Simultaneous Games with Incomplete Information

1. Basic Definitions
2. Basic Economic Examples (I)
3. Auction Theory: Second and First Price Auction

Part 2: Sequential Games

1. Sequential Games with Complete Information

1. Definition of Subgame Perfect Nash Equilibrium (SPNE)
2. Existence of SPNE
3. Economic Examples

2. Sequential Games with Incomplete Information

1. Basic Definitions
2. Basic Examples (I)
3. Examples (II): Discrimination (AEJ, Kamphorst and Swank, 2016)

Econometrics 1

Lecturer : Gaetan Bakalli bakalli@em-lyon.com , Elena Boni elena.boni@ens-lyon.fr (R TD).

Course of Master 1 – 1st semester, 2026-2027

1. Overview

This course aims to introduce regression methods for economic research and general method to test hypothesis. It shall provide fundamental tools to quantitatively explore relevant social science questions.
Intuition will be central to this class. A typical lecture will first discuss the main intuition related to the topics of the day through a set of concrete examples and realistic simulations. Most sessions will also involve hands-on R exercises and data analyses to allow grasping the main challenges associated with the topic of interest. After this description of the goals, the motivation, and the intuition behind the aspects explored in the lecture, it will turn to a comprehensive theorizing and mathematical formalization.
The first part of this class will discuss how to implement a simple but sensible regression-based analysis. It will introduce a canonical regression method, its properties and discuss the implications of its associated assumptions on the outcomes of the analysis.
The second part (last four lectures), will discuss in depth the theoretical underpinning behind the large sample properties of estimators and how to design a proper hypothesis test.

2. Prerequisites

A basic background in econometrics, statistics and probability is required for this course. A good understanding of linear algebra is also necessary. No prior knowledge of R is required, although some programming experience is a plus.

3. Practical information

This is an 8 week-course, with lectures on Tuesdays 17/09, 24/09, 01/10, 08/10 (8.00am – 11.00am), 22/10 , 05/11 (8.30am – 11.30am) and Tuesdays 22/10 and 05/11 1pm – 3pm. The R TD will be every Wednesday from 18/09 to 06/11 (except during the fall break) 8.30am – 11.30am.

Exam will be held on the 19/11 8.30am to 11.30 am for the lectures and on 13/11 9am to 12pm for the R TD.

4. Bilbiography

- Gelman, Andrew, Jennifer Hill, and Aki Vehtari. *Regression and Other Stories*. of *Analytical Methods for Social Research*. Cambridge University Press, 2020.
- Wooldridge, Jeffrey M. *Introductory Econometrics: A Modern Approach*. South-Western College Publishing, 7th edition, 2018.

- Angrist, Joshua D. and Jorn-Stefen Prischke. *Mostly Harmless Econometrics: An Empiricist's Companion*. Princeton University Press, 2009.
- Wickham, Hadley, Mine Çetinkaya-Rundel, and Garrett Grolemund. *R for data science*. O'Reilly Media, Inc., 2nd edition, 2023
- Hanck, Christoph, Martin Arnold, Alexander Gerber and Martin Schmelzer. *Introduction to Econometrics with R*. 2019.
- Casella, George, and Roger Berger. *Statistical inference*. CRC Press, 2024.
- Newey, Whitney K., and Daniel McFadden. "Large sample estimation and hypothesis testing." *Handbook of econometrics* 4 (1994): 2111-2245.
- Davison, A. C. *Bootstrap methods and their application*. Cambridge University Press, 1997.

Econometrics 2

Lecturer : Alexeï Tsygvintsev, alexei.tsygvintsev@ens-lyon.fr
Course of Master 1 – 1st semester, 2026-2027

1. Overview

This course offers a deep dive into advanced econometric techniques with a strong emphasis on financial time series analysis. The lectures are structured to provide both theoretical foundations and practical applications, ensuring students are well-prepared for empirical economic research.

1. Basic Principles of Financial Time Series: Introduction to concepts of stationarity and forecasting with practical examples.

2. Simple Autoregressive Models: Exploration of lags, the Autocorrelation Function, AR(p) models, conditions for stationarity, and forecasting methods.

3. Basic Ideas of Non-Linear Optimization: Covers Gradient Descent and the Maximal Likelihood method, supplemented with illustrative examples.

4. Simple Moving Average Models (MA(q)): Focus on the estimation of coefficients and forecasting techniques, with examples.

5. ARMA(q,p) Models: Discussion on different forms and invertibility with practical examples.

6. VAR Models: Detailed look at parameter estimation and forecasting techniques.

7. Artificial Neural Networks in Time Series Analysis: Application of neural networks to time series analysis, demonstrated through examples.

8. Random Walks and Fractal Characteristics of Time Series: Exploration of random walks and their fractal aspects in time series data.

2. Prerequisites

Students are expected to have a solid foundation in Linear Algebra, functions of several variables, differential calculus, and probability theory. Familiarity with linear regression and basic programming skills in languages such as R, Scilab, or Python are also recommended.

3. Practical information

This is a 4-week course, typically involving six hours of lecture each week.

4. Bilbiography

Gerard J. van den Berg, Maarten Lindeboom and France Portrait (2006) : « Economic - Kennedy, "A Guide to Econometrics"

Jeffrey Wooldridge, "Introductory Econometrics: A Modern Approach"

William H. Greene, "Econometric Analysis"

Mathematics 1

Lecturer : Bertrand Rémy, bertrand.remy@ens-lyon.fr
Course of Master 1 – 1st semester, 2026-2027

1. Overview

This course will be dealing with optimization in various guises.

The notions of convexity and coercivity will be introduced, extending the already studied topological criteria for existence of extrema involving continuity and compactness.

The general subject matter of the first main part will essentially be static optimization, that is optimizing values of numerical functions submitted to equality constraints (Lagrange multipliers theorem) and to inequality constraints (Karush-Kuhn-Tucker theorem).

The general subject matter of the second main part will be an introduction to dynamic optimization, in particular basics of calculus of variations, Euler-Lagrange equations…

2. Prerequisites

It is assumed that the basics of topology and differential calculus have already been considered (compactness, achieved extrema for continuous functions, 1st and 2nd order differentials, quadratic forms material in relation with differential calculus, 1st and 2nd order necessary conditions for local extrema, 2nd order sufficient condition for local extrema)

3. Practical information

This is a 8 week-course, typically with one 3 hours lecture each week.

4. Bilbiography

Essential Mathematics for Economic Analysis (fifth edition)
Knut Sydsater, Peter Hammond, Arne Strøm & Andrés Carvajal

Further Mathematics for Economic Analysis (second edition)
Knut Sydsater, Peter Hammond, Atle Seierstad & Arne Strøm

Further Mathematics for Economic Analysis – Student's Manual (second edition)
Knut Sydsater, Peter Hammond, Atle Seierstad & Arne Strøm

Introduction au droit public interne

Enseignant : Pr. David Mongoin
Cours de Master 1 – 1er semestre 2026-2027

1. Description

Ce cours de 12 séances, dont la dernière est consacrée à une évaluation écrite, a pour objet de présenter le droit public français dans ses deux branches principales : le droit constitutionnel et le droit administratif. Plus précisément, il s'agira de présenter les systèmes juridique, institutionnel et juridictionnel français en insistant sur la naissance et l'évolution des grandes notions fondamentales du droit public : la souveraineté, le régime représentatif, la loi, la séparation des pouvoirs, la justice administrative, etc. En résumé, ce cours a pour objet d'aider à mieux connaître le droit public français et à donner des éléments permettant de forger son opinion personnelle sur des questions fondamentales qui traversent la société française contemporaine : les rapports entre l'État de droit et la démocratie, la question de la laïcité ou encore le « gouvernement des juges ».

2. Prérequis

Aucun prérequis n'est exigé, sinon une réelle curiosité envers le droit en général et le droit public en particulier.

3. Information pratique

Le cours sera dispensé au premier semestre chaque lundi de 16h à 18h pendant 12 séances. L'évaluation de ce cours se composera de deux notes : une note portera sur une présentation orale en dix minutes d'une question d'actualité sur le droit public ; une note portera sur une interrogation écrite sur des questions de cours (dernière séance).

4. Bibliographie indicative

Bernard Manin, *Principes du gouvernement représentatif*, Champs, coll. « Champs essais », 2019.

Aurélie Duffy, Idris Fassassi, Gilles Guglielmi, Élisabeth Zoller, *Introduction au droit public*, Dalloz, coll. « Précis », 2022.

Pierre Avril, *La Vème République. Histoire politique et constitutionnelle*, PUF, coll. « Droit fondamental », 1994.

Denis Baranger, *Le droit constitutionnel*, Paris, PUF, coll. « Que sais-je ? », 2023.

Guy Carcassonne, avec la collaboration de Marc Guillaume, *La Constitution*, préface de Georges Vedel, Paris, Éditions du Seuil, coll. « Points Essais », 2023.

Le texte de la Constitution du 4 octobre 1958 :http://www.conseil-constitutionnel.fr/conseil-constitutionnel/francais/la-constitution/la-constitution-du-4-octobre-1958/la-constitution-du-4-octobre-1958.5071.html

Natural Resource economics

Lecturer : Mathieu Couttenier, mathieu.couttenier@ens-lyon.fr

Course of Master 1 – 1st semester 2026-2027

Natural resources are at the forefront of the response to local, national and global economic development. The goal of the course is to raise awareness among the students on the impact of natural resources on economic development in both, developed and developing countries. It relies on the literatures in economics and political sciences. After a rigorous treatment of the theory that helps to link natural resources and development, it covers a large array of recent empirical papers on the impact of natural resources on different economics outcomes but also to shed new light on the underlined mechanisms.[1]

The course consists in 4 parts:

1- Natural resources and economic development: cross-country analysis (macro effects)
- Case studies and stylized facts
- Related theory
- Empirical results on the impact of natural resources on economic growth
- Role of institutions to mitigate the effect of natural resources on economic growth

2- Natural resources and economic development: within-country analysis (local effects)
- Survey of the potential threats/strengths of the presence of natural resources on the local development
- Empirical evidence for both developed and developing countries of the impact of natural resources on different outcomes: income, local labor market, living standards, fiscal revenues, business environment, gender inequalities, health…

3- Natural resources and violence
- Theoretical background
- Evidence with cross-country analysis
- Evidence on local violence

4- Natural resources and institutions
- Impact of natural resources abundance on the quality of institutions, political change, transition to democracy, corruption and political incentives.
- Impact of institutions on natural resources investment.

[1] Please note that during the course, natural resources rely on non-renewable resources (oil, gas, diamond…) and not on renewable resources (water, forest…) or environment.

Gender Economics

Lecturer : Kenza Elass, kenza.elass@ens-lyon.fr
Course of Master 1 – 1st semester, 2026-2027

1. Overview

This course examines persistent gender disparities in economic outcomes through recent empirical research and advanced policy evaluation methods. As gender gaps in labour markets must be understood within broader contexts of household dynamics, spatial patterns, and social norms, we first review historical trends and cross-country evidence on employment and earnings inequalities. We then discuss the main factors explaining gender differences in economic participation, including occupational segregation, discrimination, and the role of social norms.

A first part of the course analyzes how household dynamics and spatial factors shape gender inequalities. We examine the impact of childcare constraints, career interruptions, and domestic labour distribution on women's economic opportunities, as well as their spatial features. A second part studies policy interventions designed to reduce gender gaps, such as family policies, parental leave schemes, anti-discrimination regulations and asks whether these effectively promote equality, sometimes revealing unexpected consequences of well-intentioned reforms.

The course then explores international dimensions, focusing on development economics perspectives including "missing women," the relationship between economic development and women's empowerment, and migration's impact on gender outcomes. We examine the political economy of gender through historical analysis of how institutional and changes have transformed gender gaps.

We conclude by addressing educational dimensions and behavioural factors that perpetuate gender gaps, particularly in STEM fields, before exploring intersectionality: how race, sexual orientation, and disability interact with gender. The final session confronts emerging challenges, including artificial intelligence, climate change, and declining fertility rates.

Most of the course is embedded in recent empirical research on both descriptive and causal identification in gender economics. Endogeneity is a core challenge when identifying the impact of gender on economic outcomes, and identification strategies, including natural experiments, randomized controlled trials, and quasi-experimental methods, will be discussed throughout the lectures.

2. Prerequisites

The course builds on previous and concurrent courses in the Msc program, in particular, Microeconomics and Econometrics.

3. Practical information

This is a 8 week-course, typically with one 3 hours lecture each week.

4. Course outline

Session 1: Introduction – Gender Gaps on the labour market

Description:

How have gender gaps in employment and earnings changed across time and countries? And how can they be explained? This session introduces gender inequalities in employment and earnings, focusing on historical trends and comparative evidence across OECD countries. We will furthermore explore key explanations for these disparities, including occupational segregation, discrimination, and the persistence of gender norms.

Required readings:

- Goldin, Claudia. 2014. "A Grand Gender Convergence: Its Last Chapter." American Economic Review, 104 (4): 1091–1119.

- Blau, Francine D., and Lawrence M. Kahn. 2017. "The Gender Wage Gap: Extent, Trends, and Explanations." Journal of Economic Literature, 55 (3): 789–865.

- Goldin, Claudia. 2006. "The Quiet Revolution That Transformed Women's Employment, Education, and Family." American Economic Review, 96 (2): 1–21.

Recommended readings:

- Olivetti, C., & Petrongolo, B. (2008). Unequal pay or unequal employment? A cross-country analysis of gender gaps. Journal of Labor Economics, 26(4), 621-654.

- Olivetti C, Petrongolo B. The Evolution of Gender Gaps in Industrialized Countries. Annual Review of Economics. 2016;8(1):405-434. doi:10.1146/annurev-economics-080614-115329.

- Card, David, et al. "Bargaining, Sorting, And The Gender Wage Gap: Quantifying The Impact Of Firms On The Relative Pay Of Women." The Quarterly Journal of Economics, vol. 131, no. 2, 2016, pp. 633–86. JSTOR, https://www.jstor.org/stable/26372650. Accessed 19 Dec. 2024.

Session 2: Household and Urban Economics

Description:

This session examines how household dynamics and spatial factors shape gender inequalities in the labour market. We will discuss how childcare responsibilities, career interruptions, and the unequal distribution of domestic labour and unpaid care work affect women's economic opportunities, as well as the economic consequences of intimate partner violence. Then, we will explore how these household constraints leads to differences between urban and rural areas as well as in commuting, time.

Required readings:

- Kleven, Henrik, Camille Landais, and Jakob Egholt Søgaard. 2019. "Children and Gender Inequality: Evidence from Denmark." *American Economic Journal: Applied Economics* 11 (4): 181–209.

- Henrik Kleven, Camille Landais, Gabriel Leite-Mariante, The Child Penalty Atlas, The Review of Economic Studies, 2024;, rdae104, https://doi.org/10.1093/restud/rdae104

- Thomas Le Barbanchon, Roland Rathelot, Alexandra Roulet, Gender Differences in Job Search: Trading off Commute against Wage, The Quarterly Journal of Economics, Volume 136, Issue 1, February 2021, Pages 381–426, https://doi.org/10.1093/qje/qjaa033

Recommended readings:

- Angrist J. and W.N. Evans "Children and Their Parents' Labor Supply: Evidence from Exogenous Variation in Family Size," American Economic Review, 88(3), 450-77.

- Lundborg, P., Plug, E., & Rasmussen, A. W. (2017). Can women have children and a career? iv evidence from ivf treatments. American Economic Review, 107(6), 1611-37

- Oreffice S, Sansone D. Commuting to work and gender norms by sexual orientation. Labour Economics. 2023;85:102451. doi:10.1016/j.labeco.2023.102451.

Session 3: Policy evaluation

Description:

This session focuses on public policies designed to reduce gender gaps in the labour market and on the methods used to evaluate their effectiveness. We will review family and childcare policies, parental leave schemes, flexible work arrangements, and anti-discrimination laws, asking to what extent these interventions succeed in promoting gender equality in employment and earnings.

Required readings:

- Olivetti, Claudia, and Barbara Petrongolo. 2017. "The Economic Consequences of Family Policies: Lessons from a Century of Legislation in High-Income Countries." Journal of Economic Perspectives, 31 (1): 205–30.DOI: 10.1257/jep.31.1.205

- Baker, Michael, and Kevin Milligan. “How Does Job-Protected Maternity Leave Affect Mothers’ Employment?” Journal of Labor Economics, vol. 26, no. 4, 2008, pp. 655–91. JSTOR, https://doi.org/10.1086/591955. Accessed 20 Dec. 2024.

Recommended readings:

- Blundell J, Simion S, Turrell A. Pay Transparency and Gender Equality. American Economic Journal: Economic Policy. Forthcoming.

- Martha J Bailey, Thomas Helgerman, Bryan A Stuart, How the 1963 Equal Pay Act and 1964 Civil Rights Act Shaped the Gender Gap in Pay, The Quarterly Journal of Economics, Volume 139, Issue 3, August 2024, Pages 1827–1878, https://doi.org/10.1093/qje/qjae006

Session 4: International and development economics

Description:
This session explores the international aspect of gender gaps with a focus on development countries. Topics include the concept of "missing women," the relationship between economic development and women's empowerment, the role of gender norms on opportunities and outcomes, and the impact of migration on gender inequalities.

Required readings:

- Duflo, E. (2012). Women empowerment and economic development. Journal of Economic Literature, 50(4), 1051-79.

- Alberto Alesina, Paola Giuliano, Nathan Nunn, On the Origins of Gender Roles: Women and the Plough , The Quarterly Journal of Economics, Volume 128, Issue 2, May 2013, Pages 469–530, https://doi.org/10.1093/qje/qjt005

Recommended readings:

- Jayachandran S. The Roots of Gender Inequality in Developing Countries. Annual Review of Economics. 2015;7:63-88. doi:10.1146/annurev-economics-080614-115404.

- Amuedo-Dorantes, Catalina, and Susan Pozo. 2006. "Migration, Remittances, and Male and Female Employment Patterns." American Economic Review, 96 (2): 222–226.

Session 5: Political economy and economic history

Description:
This session examines the intersection of gender, politics, and history in shaping economic outcomes. We will discuss gender quotas and women's political representation, the role of female leadership, and the impact of policy interventions and institutional change on gender equality. The session also considers how voting behaviours and economic preferences differ by gender, and how major historical events, such as wars, conflicts, and social movements, have transformed gender norms and had lasting economic consequences.

Required readings:

- Chattopadhyay R, Duflo E. Women as Policy Makers: Evidence from a Randomized Policy Experiment in India. Econometrica. 2004;72(5):1409-1443.

- Goldin, Claudia. "The Quiet Revolution That Transformed Women's Employment, Education, and Family," American Economic Review, Papers and Proceedings 96 (May 2006): 1-21.

- Quentin Lippmann, Alexandre Georgieff, Claudia Senik, Undoing Gender with Institutions: Lessons from the German Division and Reunification, The Economic Journal, Volume 130, Issue 629, July 2020, Pages 1445–1470, https://doi.org/10.1093/ej/uez057

Recommended readings:

- Baltrunaite A, Bello P, Casarico A, Profeta P. Gender quotas and the quality of politicians. Journal of Public Economics. 2014;118:62-74. doi:10.1016/j.jpubeco.2014.04.012.
- Jörn Boehnke et Victor Gay, « The Missing Men: World War I and Female Labor Force Participation », The Journal of Human Resources, vol. 57, n° 4, 2022, p. 1209–1241.
- Albanesi S, Olivetti C. Gender Roles and Medical Progress. Journal of Political Economy. 2016;124(3):650-695. doi:10.1086/686035.

Session 6: Education, experimental and behavioural economics

Description:

This session analyse how gender shapes educational trajectories and economic decision-making. We will discuss disparities in educational attainment, women's underrepresentation in STEM fields, the persistence of academic major segregation, and the influence of peer networks on educational investments. Drawing on insights from experimental and behavioural economics, we will also explore how gender differences in personality traits and preferences affect educational choices and economic outcomes.

Required readings:

- Nollenberger, N., Rodríguez-Planas, N., & Sevilla, A. (2016). The math gender gap: The role of culture. American Economic Review, 106(5), 257-61.
- Michela Carlana, Implicit Stereotypes: Evidence from Teachers' Gender Bias, The Quarterly Journal of Economics, Volume 134, Issue 3, August 2019, Pages 1163–1224, https://doi.org/10.1093/qje/qjz008
- Azmat G., Petrongolo B. (2014) Gender and the labor market: What have we learned from field and lab experiments? Labour Economics, 30:32–40.

Recommended readings:

- Thomas Breda, Julien Grenet, Marion Monnet, Clémentine Van Effenterre, How Effective are Female Role Models in Steering Girls Towards STEM? Evidence from French High Schools, The Economic Journal, Volume 133, Issue 653, July 2023, Pages 1773- 1809, https://doi.org/10.1093/ej/uead019
- T. Breda, C. Napp, Girls' comparative advantage in reading can largely explain the gender gap in math-related fields, Proc. Natl. Acad. Sci. U.S.A. 116 (31) 15435-15440, https://doi.org/10.1073/pnas.1905779116 (2019).
- Niederle, Muriel and Lise Vesterlund (2007). "Do Women Shy Away from Competition? Do Men Compete too Much?" Quarterly Journal of Economics, 122(3): 1067-1101.

Session 7: Intersectionality

Description:
How do characteristics like race, sexual orientation and disability intersect with gender to influence employment outcomes and discrimination in labour markets?

Required readings:

- Bertrand and Mullainathan, « Are Emily and Greg more employable than Lakisha and Jamal ? A field experiment on labor market discrimination" American Economic Review, 2004, 991-1013.

- Sansone, Dario. (2019). Pink work: Same-sex marriage, employment and discrimination. Journal of Public Economics, 180, Article 104086.

Recommended readings:

- Manasi Deshpande; The Effect of Disability Payments on Household Earnings and Income: Evidence from the SSI Children's Program. The Review of Economics and Statistics 2016; 98 (4): 638–654. doi: https://doi.org/10.1162/REST_a_00609

- Adida, C. L., Laitin, D. D., & Valfort, M.-A. (2016). "One Muslim is Enough!" Evidence from a Field Experiment in France. Annals of Economics and Statistics, (121/122), June 2016.

Session 8: Emerging dimension and challenges

Description:

This session will address the rising challenges and new aspects of gender gaps on the labour market, including artificial intelligence, climate change, and decline in fertility.

5. Additional Bilbiography (Books)

- Bessière, C., & Gollac, S. (2023). *The Gender of Capital: How families perpetuate wealth inequality*. Harvard University Press. (Also available in French)
- Babcock, L., Peyser, B., Vesterlund, L., & Weingart, L. (2022). *The No Club: Putting a Stop to Women's Dead-End Work*. Simon & Schuster.
- Goldin, C. D. (2021). *Career & Family: Women's Century-Long Journey Toward Equity*. Princeton University Press.

In French:

- Lecoq, T. (2022). *Le couple et l'argent : Pourquoi les hommes sont plus riches que les femmes* (Éd. L'Iconoclaste).
- Meurs, D. (2022). *Les entreprises et l'égalité femmes-hommes*. Presses de Sciences Po. ISBN 9782724641578.
- Grosjean, P. (2021). *Patriarcapitalisme : en finir avec les inégalités femmes-hommes*. Le Seuil.
- Périvier, H. (2023). *L'économie féministe*. Presses de Sciences Po

Microeconomics II

ECO-4201

Instructor Information

Instructor: Augustin Boone - PhD Student
Fields: Public Econ, Urban Econ and Inequality
Office: D4-014
Email: augustin.boone@ens-lyon.fr

Course Description

The course develops the analytical tools of microeconomic theory at an intermediate level, and introduce to seminal and canonical models in public economics. It provides theoretical ground to questions related to inefficiency, failure and inequality on the market, and some potential solutions to address them for the policymaker. It constitutes an entry to social insurance, labor and taxation economics. This course is the theoretical counterpart of the ECO-4208 Public Economics class.

Learning Objectives

By the end of this course, students will be able to:

Identify the questions at stake for the policymaker.
Understand the seminal concerns at the origin of the main public econ fields.
Critically assess real-world policy questions using microeconomic models.
Evaluate solutions to market failure and the welfare effects of taxes and subsidies.

Content

0. Reminders

- Recall on asymmetric information and adverse selection
- Spence model of signalling

I. Social Insurance

- Introduction to social insurance models
- Rothschild-Stiglitz model of social insurance

II. Local Public Goods

- Tiebout model of local public good expenditure
- Westhoff model of local public good under heterogenous population and migration

III. Job Search on the Labor Market

- Gale-Shapley model of matching
- McCall model on job search on a frictional labor market

IV. Optimal Income Taxation

- Mirrlees model of income taxation
- Theoretical consequences of behavioral responses

Course Materials

Manuals:

Atkinson & Stiglitz, *Lectures on Public Economics: Updated Edition* (2015);

Auerbach, Chetty, Feldstein, Saez, *Handbook of Public Economics*, vol.5 (2013);

Gruber, *Public Finance and Public Policy*, 5th ed. (2019);

Macho-Stadler & Pérez-Castrillo, *An Introduction to the Economics of Information: Incentives and Contracts* (2001);

Seminal Papers:

Spence, Michael, *Job Market Signaling*, QJE (1973);

Rothschild, Michael & Stiglitz, Joseph, *Equilibrium in Competitive Insurance Markets: An Essay on the Economics of Imperfect Information*, QJE (1976);

Gale, David & Shapley, Lloyd, *College Admissions and the Stability of Marriage*, The American Mathematical Monthly (1962);

McCall, John, *Economics of Information and Job Search* (1970);

Mirrlees, James, *An Exploration in the Theory of Optimum Income Taxation*, The Review of Economic Studies (1971)

Grading

Component	Weight	Notes
Article Presentation	50%	Courses 3-8
Final Exam	50%	Last session, in class
Total	**100%**	

Attendance policy: An additional 10% grade can be added, depending on the attendance rate of the class.

Course Schedule

Topics and readings are subject to minor adjustments; any changes will be announced.

Class	Topic	Reading	Due
1	Introduction; Adverse Selection	Ch. 0	—
2	Social Insurance; Problem set (Ch.1)	Ch. 1	—
3	Presentations (Ch.1); Local Public Goods	Ch. 1-2	2 pres. on Ch. 1
4	PS (Ch.2); Job Search	Ch. 2-3	—
5	Job Search	Ch. 3	—
6	Presentations (Ch.3); Optimal Income Taxation	Ch. 3-4	2 pres. on Ch. 3
7	Optimal Income Taxation	Ch. 4	—
8	PS + Presentations (Ch.4)	Ch. 4	2 pres. on Ch. 4
Final	**Final Exam**	Cumulative	—

Theoretical Prerequisites

Mathematics: You should be comfortable with: derivatives and partial derivatives, the chain rule, and Lagrangian constrained optimization.

Microeconomics: You should have covered: consumer and producer, partial and general equilibria, externalities, public goods, uncertainty, moral hazard and adverse selection.

Requirements: Undergrad Micro I (eg, ECO-3103), Undergrad Mathematics I (eg, ECO-3109), Undergrad Micro II (eg, ECO-3114)

Relates to: Applied Public Economics (ECO-4208) and Economic Geography (ECO-4207)

Last updated: April 8, 2026

Econometrics 3

Lecturer : Alexandre Verlet, alexandre.verlet@ens-lyon.fr
Course of Master 1 – 1st semester, 2026-2027

1. Overview

This class aims to equip students with the main econometric tools they need to answer their own causal research questions: random experiments, difference-in-differences, regression discontinuity, and instrumental variables. It will also provide intuitions and examples of other non-canonical strategies that have recently emerged in the literature.

2. Prerequisites

The course ECO-4104 Econometrics 1 is required. In addition, students must be comfortable with OLS regression and probability theory.

3. Practical information

This is an 8 week-course, typically with one 3 hours lecture each week. Practical sessions will require an active license and basic knowledge of Stata.

4. Bibliography

Econometric Analysis of Cross Section and Panel Data, Wooldridge 2010
Davidson and MacKinnon's Econometric Theory and Methods, MacKinnon and Davidson
Mostly Harmless Econometrics, Angrist and Pischke 2008
Causal Inference: The Mixtape, Cunningham 2021

Mathematics 2

Lecturer : Eric Thierry, eric.thierry@ens-lyon.fr
Course of Master 1 – 2nd semester, 2026-2027

1. Overview

This computer science is intended for students wishing to learn or improve their programming skills. The programming language chosen will be Python, a language widely used both in teaching for its ease of access and in the professional world for its wide range of applications. In addition to learning Python syntax and creating small programs, this course will be an opportunity to discuss good programming practices, to try out algorithm design and analysis, and to learn how to use classic libraries of programs such as Matplotlib for data visualization, Pandas for data manipulation, or Scipy for scientific computation (related to the content of mathematics teaching). This course will also be an opportunity to experiment with mathematical tools, such as linear algebra or differential calculus, and to discuss a little about the use of AI for coding.

2. Prerequisites

No programming prerequisite. Some exercises may refer to mathematical notions studied in previous courses (e.g. Mathematics 1) like linear algebra or differential calculus.

3. Practical information

This course comprises 8 sessions, with one 3-hour session (lecture & tutorial) per week, and ends with a 3-hour exam. Each session will include a practical coding tutorial. Therefore students will be asked to bring or share some device, like a laptop, where they can code in Python.

4. Bibliography

All the necessary educational material will be provided. The course will not require a particular textbook. But of course you can find many textbooks and online tutorials or apps teaching Python. Here are a few examples.

Textbooks:

- "*Python for kids*" by Jason R. Briggs ("Python pour les kids" en version française), for an easy introduction to Python if you are completely new to programming.
- *"Think Python. How to think like a computer scientist"* by Allen B. Downey, for a progressive introduction to Python (only core Python, it does not introduce the classical additional libraries). Free download on https://greenteapress.com/wp/think-python-2e/

- *"Python for Data Analysis"* by Wes McKinney, for an introduction to data science with Python including the use of classical libraries like numpy, matplotlib, pandas (requires basic knowledge of Python).
- *"Hands-On Machine Learning with Scikit-Learn, Keras, and Tensorflow"* by Aurélien Géron, for a huge reference on Machine Learning with Python (requires basic knowledge of Python).

Online references:

- Openclassrooms: https://openclassrooms.com/ (search for "Python" to get a list of courses ranging from beginner to expert)
- SoloLearn: https://www.sololearn.com/ (free app for beginners)
- Python Reference Site: https://www.python.org/ (with the latest documentation)

ENS de Lyon - M1 Advanced Economics

Economic Geography - Florence Goffette-Nagot - 24h course

Overview

The first part of the course is devoted to the economic mechanisms that shape the within- and between city spatial organisation. This will typically answer the following questions:

- Why do cities exist and induce an uneven spatial distribution of income and of land and commodity prices?
- How can cities of different size co-exist within integrated economic areas?
- What does shape the city internal structure, in terms of housing types and income segregation?
- What is the impact of people and goods mobility on spatial concentration?
- What is the role of local public policies and of land use regulation on spatial disparities?

The second part of the course moves to the empirical studies that evaluate the gains and costs from agglomeration. A special emphasis is put on the impact on spatial disparities of individual location choices made by workers that are heterogeneous in skills. The balance between income gains and costs of living is studied, typically assessing whether cities are too large or too small. Work about the value of consumption amenities (restaurants, cultural life, climate, …) will be presented too. Last, and depending on time available, either the evaluation of place-based policies trying to revive deprived neighbourhoods and/or the impact of transport infrastructure on local development will be presented.

Outline

1 Introduction: Trends in spatial disparities and course overview.
- 1-1 Course organisation.
- 1-2 The emergence of spatial disparities.
- 1-3 What is Urban and Regional Economics?

2 Why do cities exist? A review of agglomeration mechanisms.
- 2-1 Internal increasing returns to scale versus trade costs.
- 2-2 Sharing externalities.
- 2-3 Matching externalities.
- 2-4 Learning externalities.

3 Why are rents higher closer to city centres? The monocentric city model.
- 3-1 The monocentric city model.
- 3-2 Housing production.
- 3-3 Extending the model.

4 How can large and smaller cities co-exist? Mobility and systems of cities.
- 4-1 Efficient and equilibrium city size.
- 4-2 Spatial equilibrium with many cities.
- 4-3 Agglomeration and trade.

5 The empirics of agglomeration economies.
- 5.1 Measuring spatial concentration.
- 5.2 Determinants of local productivity.

5.3 Knowledge spillovers.

6 The empirics of agglomeration costs and urban inequality.

6.1 From theory to estimation.
6.2 Housing and land costs.
6.3 Real wage disparities and amenity value.
6.4 Grocery prices and love of diversity.

Optional

7 Place-based policies.

7-1 Theoretical rational.
7-2 Challenges of policy evaluation.
7-3 Enterprise zones.
7-4 Moving to opportunity programmes.

8 Cities and transport

8-1 Transport demand.
8-2 Transport, growth, and specialization.
8-3 Transport and suburbanization.

Organisation

Slides are circulated before the lectures such that students can concentrate on the course and participate through questions.

Work from one week to the other consists in carefully re-reading the slides and asking further clarification at the next course if needed. Extra readings will be suggested too.

Prerequistes

Microeconomics under perfect and imperfect competition (Micro I and II).

Basics of applied econometrics (including panel approaches and notions of instrumentation).

Preliminary list of references

Chapter 1

Combes, P.-P., T. Mayer, and J.-F. Thisse, 2008. Economic Geography (ch. 1 and 2), Princeton University Press.

McMillen, D. and J. McDonald, 2011. Urban Economics and Real Estate; Theory and Policy (ch. 1 and 2), 2nd ed. Wiley.

O'Sullivan, A., 2012. Urban Economics (ch. 1 and 2), 8th ed. McGraw-Hill.

Chapter 2

Brueckner, J., 2011. Lectures on Urban Economics (ch. 1), MIT Press.

Combes, P.-P., T. Mayer, and J.-F. Thisse, 2008. Economic Geography (ch. 2), Princeton University Press.

Duranton, G., Puga, D., 2004. Micro-foundations of urban agglomeration economies. In: Henderson, V., Thisse, F. (Eds.), Handbook of Regional and Urban Economics, vol. 4. North-Holland, Amsterdam, pp. 2063–2117.

Chapter 3

Fujita, M., 1990. Urban Economic Theory: Land Use and City Size (ch. 2, 3, 4), Cambridge University Press.

Fujita, M. and J.-F. Thisse, Jacques-François. Economics of Agglomeration: Cities, Industrial Location, and Globalization. Cambridge University Press, Cambridge, 2013.

Chapter 4

Combes, P.-P., G. Duranton, and H. Overman, 2005. Agglomeration and the adjustment of the spatial economy, Papers in Regional Science, 84(3), 311-349.

Moretti, E. (2011). Local labour markets. In O. Ashenfelter & D. Card (eds.), *Handbook of Labor Economics* 4.

Combes, P.-P., T. Mayer, and J.-F. Thisse, 2008 (chap. 6, 7, 8). Economic Geography, Princeton University Press.

Chapter 5

Combes, P.P. and L. Gobillon, 2015. The empirics of agglomeration economies. In Duranton, Gilles, Henderson, Vernon, and Strange, Will, eds., Handbook of Urban and Regional Economics 5A. North-Holland, Amsterdam.

Glaeser, E. L., and D. C. Maré. 2001. Cities and skills. Journal of Labor Economics 19:316–42.

Jaffe, A. B. (1989). Real effects of academic research, American Economic Review 79(5): 957-970.

Jaffe, A. B., Trajtenberg, M. and Henderson, R. (1993). Geographic localization of knowledge spillovers as evidenced by patent citations, Quarterly Journal of Economics 108(3): 577-598.

Chapter 6

Albouy, D., 2008. Are big cities really bad places to live? Improving quality-of-life estimates across cities. Working Paper 14472, National Bureau of Economic Research.

Combes, P-P., Duranton, G., Gobillon, L., 2019. The Costs of Agglomeration: House and Land Prices in French Cities, Review of Economic Studies, forthcoming.

Handbury, J.. Are poor cities cheap for everyone? Non-homotheticity and the cost of living across US cities, 2013. Mimeograph, Wharton University.

Handbury, J. and D. Weinstein, 2015. Goods prices and availability in cities. Review of Economic Studies, 82(1): 258-296.

Moretti, E., 2013. Real wage inequality, American Economic Journal: Applied Economics 5(1): 65-103.

Chapter 7

Briant, A., M. Lafourcade, and B. Schmutz, 2015. Can Tax Breaks Beat Geography? Lessons from the French Enterprise Zone Experience, American Economic Journal: Economic Policy 7(2), 88-124.

Criscuolo, C., R. Martin, H.G. Overman, and J. Van Reenen, 2019. Some Causal Effects of an Industrial Policy, American Economic Review forthcoming.

Givord, P., S. Quantin, and C. Trevien, 2018. A long-term evaluation of the first generation of French urban enterprise zones, Journal of Urban Economics 105(C), 149-161.

Kline, P. and E. Moretti, 2014. Local Economic Development, Agglomeration Economies, and the Big Push: 100 Years of Evidence from the Tennessee Valley Authority, Quarterly Journal of Economics 129, 275-331.

Neumark, D. and H. D. Simpson, 2015. Place-based policies, in: G. Duranton, J.V. Henderson, W. Strange (eds), Handbook of Regional and Urban Economics 5A, North-Holland, Amsterdam.

Chapter 8

Baum-Snow, N., 2007. Did highways cause suburbanization? Quarterly Journal of Economics 122, 775-805.

Duranton, G. and M. Turner, 2016. The fundamental law of road congestion: Evidence from US cities, American Economic Review 101(6), 2616-2652.

Duranton, G. and M. Turner, 2012. Urban growth and transportation, Review of Economic Studies, 1407-1440.

Duranton, G., Morrow, P. M., and M. Turner, 2014. Roads and trade: Evidence from the US, Review of Economic Studies 81(2), 681-724.

Faber, B., 2014. Trade integration, market size, and industrialization: Evidence from China's national trunk highway system. Review of Economic Studies 81(3), 1046-1070.

ENS - European and international public law

Associated Professor : Christine FERRARI-BREEUR
Course of Master 1 – 2nd semester, 2026-2027

1. Overview

The course presents international and EU law and their relationship to French law.

The actors involved in shaping these laws will be enumerated. The results will then be detailed, i.e. the sources of international law (mainly treaties) and above all the sources of EU law. Finally, the relationship between French law and these two legal orders will be explained.

This course will provide an opportunity to explain the workings of the EU and some of its policies, and to consider current issues concerning its future.

2. Practical information

This is a week-course, typically with one 2 hours lecture each week.

3. Bilbiography

- ALLEN Stephen, International Law, LawExpress, Pearson, 4th edition, 259p
- BANTEKAS Ilias and PAPASTAVRIDIS Efthymios, Concentrate International Law, Oxford, 5th edition, 232p
- GUTH Jessica, EU Law, Pearson, LawExpress Q&A, 5th edition, 270p
- HOMEWOOD Matthew and SMITH Clare, Concentrate EU Law, Oxford, 8th edition, 240p
- LESCOT Christophe, Organisations européennes, coll. Paradigme, Larcier, 25eme éd, 428p

- Pour le texte (en anglais) des traités UE : https://eur-lex.europa.eu/collection/eu-law/treaties/treaties-force.html#new-2-51
- Pour le texte (en anglais) de la Convention européenne des droits de l'homme (et ses protocoles) : https://www.echr.coe.int/documents/d/echr/convention_ENG

Information Economics

Lecturer : Elisa Mougin, elisa.mougin@ens-lyon.fr
Course of Master 2 – 2st semester, 2026-2027

***

1. Overview

Welcome to the graduate-level course in Information Economics. In this course, we will embark on a comprehensive exploration of economic theories related to information and its applications. Understanding the vital role of information in economic decision-making is crucial for researchers and policymakers alike. Therefore, this course is tailored to equip you with the analytical tools necessary to navigate the complexities of information economics.

The first part of the course covers the theoretical approach to information and how economic models integrate it, better accounting for economic phenomena based on incomplete information or unbalanced preferences. The second part of the course deals with the market for news and the sector of information production. It will discuss the political economy of information and spend some time on current topics such as information in the digital age, trust, and false information.

This course is designed to provide a solid foundation and enhance your ability to apply these concepts in practical settings. Class sessions will be interactive and dynamic, encouraging active participation. You will be asked to analyze tables, interpret equations, and engage in meaningful discussions in class.

2. Prerequisites

Prerequisites for this course include a robust background in applied microeconomics, econometrics, and evaluation techniques at the graduate level.

3. Practical information

This is a 24 hour-course, typically with one or two 3 hours lecture each week. The detailed agenda is available on the course page on the *Portail des Etudes*.

A list of readings will be provided at the beginning of the course. For each class, there will be one mandatory reading to prepare, along with a short list of recommended readings for those who wish to explore the topic further.

4. Bibliography

Allcott, H., & Gentzkow, M. (2017). Social media and fake news in the 2016 election. *Journal of economic perspectives*, *31*(2), 211-236.

Berry, S. T., & Waldfogel, J. (2001). Do mergers increase product variety? Evidence from radio broadcasting. *The Quarterly Journal of Economics*, *116*(3), 1009-1025.

Birchler, U., & Bütler, M. (1999). *Information economics*. Routledge.

Cagé, J., & Huet, B. (2021). *L'information est un bien public: refonder la propriété des médias*. Seuil.

George, L. M., & Waldfogel, J. (2006). The New York Times and the market for local newspapers. *American Economic Review*, *96*(1), 435-447.

Hamilton, J. (2016). *Democracy's detectives: The economics of investigative journalism*. Harvard University Press.
Webster, J. G. (2014). *The marketplace of attention: How audiences take shape in a digital age*. Mit Press.

Strömberg, D. (2004). Radio's impact on public spending. *The Quarterly Journal of Economics*, *119*(1), 189-221.

Topics in Economic History

ECO-5002, spring 2027

Cédric Chambru

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Jade Ponsard

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Course description

This graduate-level course offers an introduction to quantitative economic history, and involves the study of a broad-ranging theme, occasionally drawing on insights from other disciplines such as political science and history. Topics include the impact of shocks on past societies, social conflict, the role of institutions and state-building in economic development, the various effects of wars, and the short- and long-run consequences of enfranchisement and political repression. Much of these topics are intertwined in the lecture and readings.

The course relies on a mix of lectures, student presentations, and replication exercises to foster a practical and participatory learning experience. Through this approach, students gain both theoretical knowledge and practical skills in quantitative economic history research.

Pre-requisites

The course builds on and extends previous and concurrent courses in applied economics in the MSc program. Familiarity with contents of these courses is assumed. It includes a working knowledge of how to apply economic models in context and how to select and use appropriate econometric tools to test the theory. Familiarity with the content of other economic history courses are a plus, but not compulsory. Students should also have working knowledge of statistical packages such as Python, R, and/or Stata.

ECTS credits

Upon successful completion of this course, students will receive 4 ECTS credits.[1]

Course objectives

By the end of this course, students should be able to:

- develop an understanding of the history of the field of economic history;
- critically evaluate (primary) sources in the process of assembling a dataset;
- apply economic theory to historical data and devise (or judge) valid empirical strategies.

[1] Following the European Credit Transfer and Accumulation System (ECTS), 1 ECTS credit is the equivalent of approximately 25-30 hours of study.

Students should also gain proficiency in:

- making individual and group presentations;
- writing an informative article review (referee report);
- using statistical software for economic history research;
- devising an essay topic supported by an appropriate bibliography.

Course structure

The course is organised in 8 sessions of 3 hours. Each class is devoted to discussion of a particular topic. The first hour of the class will be a lecture led by the instructor. The second hour of the class will be a discussion on the readings led by students. The last hour will be devoted to working on a replication study. Active class participation is vital. It is expected that students will have done all of the readings in advance of the class.

Attendance to all sessions is compulsory. Repeated absences without motive sent prior to the session are penalised (10 % downgrade on the final GPA).

Assessment

There is no final exam. Instead, the grading breakdown is as follows:

In-class presentation	35 %	
In-class discussion	15 %	
Referee report	20 %	Term paper
Replication report	30 %	

In-class presentation

Students should present a paper like if they were the authors at a conference. Presentation should last no longer than 20 minutes. In general, presentations should contain the main contributions of the paper; a short discussion of the literature; a description of the data and the empirical (identification) strategy; and an overview of the results (and if pertinent a discussion of the plausible mechanisms at stake).

In-class referee report

Students should act as reviewers and discuss the strengths and weaknesses of the paper for no more than 10 min. More information will be given during Class 1. Broadly speaking, the discussion should follow the usual guidelines for writing referee report. In particular, it should at least:

- summarise the method and main contribution;
- discuss how the author's findings fit into the existing literature;
- evaluate the range of sources/data used and their pertinence to answer to the research question;
- assess the empirical strategy and its relevance to answer to the research question.

Term Paper

The term paper for this course consists of a referee report and a reproducibility exercise. The objective of this assignment is to familiarise students with the process of evaluating, assessing, and reproducing empirical research in economics.

Students may select a **published paper of their choosing** in quantitative economic history, provided that a replication package is available. We strongly recommend students to search for papers in the Top 5 (AER, QJE, ECTA, JPE, REStud) + AEJ: Applied Economics, EJ, JEEA, and REStat. These papers typically contains a JEL code starting by 'N'.

Students will work in teams of **up to four members**. Team members are expected to collaborate throughout the entire exercise! Priority should be given to papers related to topics discussed in class, although alternative selections is possible.

General guidelines about the term papers are provided below:

- Students will first write a referee report following standard guidelines in the field (see Berk et al. 2017).
- They will then attempt to reproduce the baseline results presented in the paper (computational reproducibility) and implement a series of reproducibility and robustness checks (robustness reproduction).[2]
  - When applicable, students are encouraged to discuss the inclusion of each control variable in the context of omitted variable bias and bad controls. For each variable, assess whether it is a collider (and thus opens a backdoor path) or a necessary control to avoid omitted variable bias. This exercise should be repeated to justify the inclusion or omission of control variables in robustness checks. Students may use Directed Acyclic Graphs (DAGs) to document and support their discussion. Each report should include a table similar to the one below, summarising the rationale behind each robustness check.
  - Students are also encouraged to produce relevant data visualisations to highlight and interpret their results. This includes, but is not limited to, the use of specification curves to document robustness analyses (Simonsohn et al. 2020).[3]
  - Students are also encouraged to incorporate additional data, when relevant, to conduct supplementary analyses, in particular when the original replication package contains only the final dataset.

Teams must inform the instructors of their selected paper no later than 17 January 2026.

There is no formal page limit for the term paper; however, submissions are expected to be no longer than 20–25 pages, including figures, tables, and references (A4 format, font size 11, margins 2.54 cm, line spacing 1.5). The term paper is due on 14 March 2026.

[2] Students may familiarise themselves with the structure of such reports by consulting existing documents available at https://i4replication.org/discussion-papers. Students are free to conduct all reproducibility exercises in the language of their choice (e.g. Julia, Python, R, Stata).

[3] Various options exist to implement specification curves in common programming languages (e.g. in Python: 1; R: 1, 2; and Stata: 1, 2).

The final deliverable must consist of a single PDF document containing both the referee report and the reproducibility report, as well as a link to a replication package providing all relevant data, code, and documentation used in the reproducibility exercise.[4]

Table 3: Example of robustness checks

Nr.	Main outcome in Table 1	Analytical decision	Rationale & Challenge	Choice(s) in Robustness Checks (include also the original analysis choice if that is considered one of the reasonable analytical choices)
1.	(1)	Outcome Variable	The authors use indices for all outcomes. This reduces the problem of MHT and allows to include several dimensions into one measure. Yet, indices can be created in many different ways.	1. Original choice 2. Alter definition of outcome index by including a more comprehensive set of input variables
2.	(1)	Control Variables	Timing of EL4. The endline took place over 5 months. In particular for income, food security, and consumption, the timing of the survey could matter.	1. Original choice 2. Add controls for the month in which the interview took place
3.	(1)	Control Variables	The authors do not use any baseline controls. At baseline, slight imbalance for income.	1. Original choice 2. Add baseline controls for all outcome variables.

Note: Column "Main outcome in Table 1" should include a reference to the main claims (main outcomes) from Table 1 that the numbered item refers to. Column "Analytical decision" captures the part of the analysis the robustness check refers to. Column "Rational & Challenge" captures the reason for the robustness check and which problems of the original paper it tries to address. Column "Choice(s) in Robustness Checks" includes the analytical choices included in the multiverse robustness checks (note that this can be one choice if the original analysis choice is not considered reasonable and only one alternative reasonable choice is included in the robustness checks).

Figure 1: Example of robustness checks

[4] Additional guidance on structuring replication packages is available here and here.

Course Outline

This is a tentative schedule and is subject to change at any time.

Session 1: Introduction

Topic Overview of the course objectives, structure, and requirements. Mapping the landscape of quantitative economic history

Readings

Assigned none

Session 2: Shocks

Topic Historical responses to external shocks with a focus on famine, epidemics, and conflicts

Readings

Assigned none

Session 3: State-building

Topic State-building as a catalyst for economic development

Readings

Assigned Chiovelli, Giorgio et al. (2024). *Bourbon Reforms and State Capacity in the Spanish Empire*. Working paper No. 36. Becker Friedman Institute for Economics

Recommended Chambru, Cédric et al. (2024). 'The Dynamic Consequences of State-Building: Evidence from the French Revolution'. *American Economic Review* 114.11, pp. 3578–3622. DOI: 10.1257/aer.2022011

Additional Besley and Persson (2010), Guardado (2022), Lax-Martinez et al. (2022)

Session 4: Social instability, reforms and regime changes

Topic Focus on actors and policies during unstable and revolutionary periods

Readings

Assigned Jha, Saumitra and Steven Wilkinson (2023). *Revolutionary Contagion*. Stanford GSB Research Paper 4084. DOI: 10.2139/ssrn.4406390

Recommended Garfias, Francisco and Emily A. Sellars (2022). 'When State Building Backfires: Elite Coordination and Popular Grievance in Rebellion'. *American Journal of Political Science* 66, pp. 977–992. DOI: 10.1111/ajps.12611

Additional Besley, Burgess et al. (2022), Spenkuch et al. (2023)

Session 5: The American Civil War

Topic Leverage the American Civil War to study how ideas propagate

Readings

Assigned Petroff, Casey (2023). *The Origins of Women's Political Capital in the Separate Sphere*. Working Paper

Recommended Dippel, Christian and Stephan Heblich (2021). 'Leadership in Social Movements: Evidence from the "Forty-Eighters" in the Civil War'. *American Economic Review* 111.2, pp. 472–505. DOI: 10.1257/aer.20191137

Additional Bazzi et al. (2023), Esposito et al. (2023)

Session 6: Repression in the East

Topic Dig into different forms of repression to study the effect of exposure to violence, famine and spying on short-run individual outcomes and persistence across generations

Readings

Assigned Rozenas, Arturas et al. (2017). 'The Political Legacy of Violence: The Long-Term Impact of Stalin's Repression in Ukraine'. *The Journal of Politics* 79.2, pp. 1147–1161. DOI: 10.1086/692964

Recommended Lichter, Andreas et al. (2021). 'The Long-Term Costs of Government Surveillance: Insights from Stasi Spying in East Germany'. *Journal of the European Economic Association* 19.2, pp. 741–789. DOI: 10.1093/jeea/jvaa009

Additional Kapelko and Markevich (2014), Miho et al. (2024), Nikolova et al. (2022)

Session 7: World Wars

Topic Explore the impact of World War I and World War II on women and families

Readings

Assigned Arnsbarger, Madison (2024). *The Political Economy of Women's Suffrage and World War I*. Working Paper

Recommended Gay, Victor (2023). 'The Intergenerational Transmission of World War I on Female Labour'. *The Economic Journal* 133.654, pp. 2303–2333. DOI: 10.1093/ej/uead029

Additional Brainerd (2017), Gay and Boehnke (2021)

Session 8: Enfranchisement

Topic Study the consequences of obtaining the right to vote in the private and political spheres

Readings

Assigned Degrave, Anne et al. (2024). *Peasants into Citizens: Suffrage Expansion and Mass Politics in France*. Working Paper No 24. TSE Working Paper

Recommended Facchini, Giovanni et al. (2020). *The Franchise, Policing, and Race: Evidence from Arrests Data and the Voting Rights Act*. Working Paper No 27463. National Bureau of Economic Research. DOI: 10.3386/w27463

Additional Biavaschi and Facchini (2020), Kose et al. (2021)

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Chiovelli, Giorgio, Leopoldo Fergusson, Luis R. Martinez, Juan David Torres and Felipe Valencia Caicedo (2024). *Bourbon Reforms and State Capacity in the Spanish Empire*. Working paper No. 36. Becker Friedman Institute for Economics.

Degrave, Anne, Alejandro Lopez-Peceno and Arturas Rozenas (2024). *Peasants into Citizens: Suffrage Expansion and Mass Politics in France*. Working Paper No 24. TSE Working Paper.

Dippel, Christian and Stephan Heblich (2021). 'Leadership in Social Movements: Evidence from the "Forty-Eighters" in the Civil War'. *American Economic Review* 111.2, pp. 472–505. DOI: 10.1257/aer.20191137.

Esposito, Elena, Tiziano Rotesi, Alessandro Saia and Mathias Thoenig (2023). 'Reconciliation Narratives: The Birth of a Nation after the US Civil War'. *American Economic Review* 113.6, pp. 1461–1504. DOI: 10.1257/aer.2021041.

Facchini, Giovanni, Brian G. Marco Knight and Cecilia Testa (2020). *The Franchise, Policing, and Race: Evidence from Arrests Data and the Voting Rights Act*. Working Paper No 27463. National Bureau of Economic Research. DOI: 10.3386/w27463.

Garfias, Francisco and Emily A. Sellars (2022). 'When State Building Backfires: Elite Coordination and Popular Grievance in Rebellion'. *American Journal of Political Science* 66, pp. 977–992. DOI: 10.1111/ajps.12611.

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Miho, Antonela, Alexandra Jarotschkin and Ekaterina Zhuravskaya (2024). 'Diffusion of Gender Norms: Evidence from Stalin's Ethnic Deportations'. *Journal of the European Economic Association* 22.2, pp. 475–527. DOI: 10.1093/jeea/jvad040.

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Rozenas, Arturas, Sebastian Schutte and Yuri M. Zhukov (2017). 'The Political Legacy of Violence: The Long-Term Impact of Stalin's Repression in Ukraine'. *The Journal of Politics* 79.2, pp. 1147–1161. DOI: 10.1086/692964.

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Syllabus - Topics in Econometrics (ECO5106)

MSc Advanced Economics - ENS Lyon

Course website

All the information relative to this class can be found on the course website.

Instructor

- Vincent Bagilet
- vincent.bagilet@ens-lyon.fr
- ENS site Descrates, office D4.014

Course Objectives and Overview

This course aims to explore some of the practical issues and challenges routinely faced when implementing an applied econometrics analysis. It ambitions to help students be aware of these challenges and to provide them with tools to spot others challenges by themselves.

This course aims to give students a deeper understanding of:

- How regression works "**under the hood**"
- Causal identification strategies and their assumptions
- How **design**, **modeling**, and **analysis** choices shape empirical results
- Common pitfalls and challenges in empirical work
- How to use **simulations** to explore estimator behavior and diagnose potential problems specific to their own cases
- Existing references and where to find additional information on a specific topic

Prerequisites

Prerequisites for this class include foundational knowledge in econometrics, statistical theory, causal inference, mathematics for economists, and familiarity with statistical software, in particular R and the Tidyverse.

Caution

This course will make an extensive use of R and RStudio. Please install it before class. You can find instructions for installation here.

You are also expected to have a previous knowledge of R and of the Tidyverse. If you do not, the book **R for Data Science** is definitely the **best** resource to learn R and the

tidyverse by yourself. Read it from cover to cover, running all the code in the book yourself; by the time you finish the book, you will know R!

Grading and assignments

Your grade for this class will be divided between several kind of assignments and grading mechanisms:

Assignment	Percentage of final grade	Due date
Final report	30 %	November 9, 8pm
Final presentation	20 %	November 6, 8:45am
Participation	10 %	-
Replication	20 %	October 8, 9:00am
Homework	20 %	See below

Homework

Your homework will be composed of graded assignment and/or readings. Readings are mandatory, we will discuss the papers in class together and everyone will be invited to participate in the discussion. These are due before the beginning of each lecture and according to the following schedule:

- Due before lecture 1 (Fundamentals - 15/09): -
- Due before lecture 2 (Simulations - 22/09):
    - Non-graded assignment: Simple Simulation and Leverage
- Due before lecture 3 (Linear regression and causal inference - 23/09):
    - Reading: Abadie et al (2020)
- Due before lecture 4 (Design: FE - 29/09): TBA
- Due before lecture 5 (Design: IV - 30/09): TBA
- Due before lecture 6 (Modelling - 07/10): TBA
- Due before lecture 7 (Analysis - 08/10): TBA
- Due before lecture 8 (Communicating - 14/10): TBA

Final Project

Overview

This project can be handed-in in teams of two but you can also do it alone if preferred. Your team will design and implement a simulation that replicates an analysis one of you might pursue in their master's thesis. Think of this as an opportunity to get an early start on a potential research idea — though it does not need to be something you will actually work on in your thesis.

You will generate synthetic data, specify a data-generating process (DGP), define an identification strategy, and estimate a regression model to recover a causal effect of interest. Because you generate the data, you will know the "true" effect, which allows you to examine how well your empirical strategy recovers it.

Objective of the Project

This project aims to make you think carefully about the type of data you need for your master's thesis, its structure, the identification strategies you could use, the parameter you would actually be estimating, and the hurdles you might encounter in practice.

You should use this exercise to:

- Define a clear research question and identification strategy for your master's thesis or research project
- Think about the design of your analysis: the structure of actual data you may use in your thesis, which variables to include in your analysis
- Consider potential threats to identification and to the estimation of the effects of interest
- Evaluate how some undesirable features that might prevent you from retrieving the true effect of interest
- Reflect on what challenges might arise when applying the same design to real-world data.

Important

You should **learn something thanks to the simulation**, *eg* what sample size you will need to have in your actual analysis to have adequate statistical power, whether there might be econometric issues associated with the use of a given level of fixed effects is appropriate, what granularity of data you will need, etc. You should also **discuss points that you realized while building your simulation**, *eg* "initially I wanted to do X but I realized with the simulation that it would not work. Here is an example simulation where with X and where I cannot retrieve the true effect".[1]

The final product should resemble a short research paper, with the crucial difference that your data are simulated. In addition, it should have a section describing what you learned with your simulation and which approaches you abandoned because/thanks to the simulation. Your report should also highlight potential pitfalls that you might face when implementing the same analysis on actual data.

Important

When generating your data, start extremely simple. You will complexify and make your analysis more realistic later. And **start working on this assignment early!**

Project Proposal

Write a short document (2 pages max) that briefly presents:

- The context and motivation
- Your research question
- Your main econometric specification
- What you intend to test/explore with your simulation (for instance the sample size needed, the impact of choices regarding the level of fixed effects chosen, etc). What will you learn with your simulation?

Deliverables

For this project, we ask you to produce 3 deliverable. The report and .html documents are **due on November G, 8pm**.

- A **short standalone report**, at most 7 pages-long, structured as a concise research paper, including:
    - Context and motivation. Brief but rooted in theory.
    - Research question.
    - Empirical specification. Describe both the specification you would use if you were working on actual data and the one you will use on your simulated data (if different)
    - Data section. Introduce the structure of your different simulations[2] and key choices you made — brief, with full details in the Quarto file.
    - Modeling and analysis results. The most important aspect is to discuss some challenges you may face (*eg* heterogenous effects, strong correlation between your FE and treatment, etc) and to explain how you tested and explored them.

    - Discussion of lessons learned for your research project (*eg* structure and granumlarity of the data needed, aspects you will need to be careful about in your analysis) and potential real-world challenges you may face but did not simulate and explored here.

- A **.html document generated with Quarto** presenting your whole analysis. You should return a rendered and standalone .html version of a Quarto document. It should be roughly similar to the documents describing the simulations we implemented together (for instance here). Report your code and describe your choices concisely but extensively.
- A **20 min presentation** of your project (on November 6, 8:45am)

Replication

You will have to replicate a paper, in groups of 4-5, following the procedure developed by the Institute 4 Replication. I will provide more instructions shortly.

You are asked to write a report on your replication and to send it to me by October 8, 9:00am.

Bibliography

The course website provides a series of references to complement and go beyond the material taught in this class. Among those, key handbooks references are:

- Angrist, Joshua D. and Jorn-Stefen Prischke, *Mostly Harmless Econometrics: An Empiricist's Companion*: the causal inference bible for economists
- Cunningham, *Causal Inference, The Mixtape*: a nice overview of causal inference approaches, with R, Python and Stata code and examples
- Huntington-Klein, *The Effect: An Introduction to Research Design and Causality*: an excellent causal inference textbook centered on intuitions and not maths.
- Gelman, Hill and Vehtari, *Regression and Other Stories*: presents regression from a fresh stats perspective, centered on intuition, simulations and design.

Footnotes

1. X might be "using data at the municipality level" or "use that level of fixed effects" for instance.↩
2. You will have various simulations with increasing levels of complexity↩

Topics in Microeconomics:
Causes and Consequences of Residential Segregation

M2 Course - 2026-2027 2nd semester

ENS Lyon Department of Economics

Dionissi Aliprantis (dionissi.aliprantis@ens-lyon.fr)
Florence Goffette-Nagot (florence.goffette-nagot@cnrs.fr)

1 Overview

This course will present, both theoretically and empirically, economic analyses of the causes and consequences of residential segregation.

As an introduction, a few facts regarding racial and income segregation in the US and in France will be reviewed.

The first part of the course deals with the theoretical factors of spatial sorting within cities. The monocentric model with different transport costs and amenities is recalled briefly. Then the Tiebout model of voting with one's feet, Schelling's model with social preferences and the Rosen-Roback models are exposed. More recent models dealing with the interplay of these basic factors with some recent evolutions will then be considered, namely changes in labor demand by skills, and in the valuation of intra-urban amenities.

The second part will develop on the consequences of residential segregation. A first methodological part will discuss the challenges raised by the identification of neighborhood effects. Recent empirical analyses for the US will then be presented in details.

The last part of the course will consider how some housing policies may act against residential segregation, both in the US and in France.

2 Prerequisites

The course builds on previous courses in the Master program, in particular, Microeconomics 1 & 2, Econometrics 1-3 and Economic Geography. Familiarity with contents of these courses is assumed.

3 Practical information

This is a 18-hours course, with 2×3 hours lecture each week. Three of them will be given by each of the two lecturers

4 References

Couture, Victor, Cecile Gaubert, Jessie Handbury, and Erik Hurst. 2024. "Income Growth and the Distributional Effects of Urban Spatial Sorting." The Review of Economic Studies 91 (2): 858–98. https://doi.org/10.1093/restud/rdad048.

Couture, Victor, and Jessie Handbury. 2017. “Urban Revival in America, 2000 to 2010.” w24084. Cambridge, MA: National Bureau of Economic Research. https://doi.org/10.3386/w24084.

Curci, Federico, and Hasin Yousaf. 2023. “Gentrification.” In Handbook of Labor, Human Resources and Population Economics, edited by Klaus F. Zimmermann, 1–36. Springer International Publishing. https://doi.org/10.1007/978-3-319-57365-6_422-1.

Diamond, Rebecca. 2016. “The Determinants and Welfare Implications of US Workers’ Diverging Location Choices by Skill: 1980–2000.” American Economic Review 106 (3): 479–524. https://doi.org/10.1257/aer.20131706.

Diamond, Rebecca, and Cecile Gaubert. 2022. “Spatial Sorting and Inequality.” Annual Review of Economics 14 (1): 795–819. https://doi.org/10.1146/annurev-economics-051420-110839.

Guerrieri, Veronica, Daniel Hartley, and Erik Hurst. 2013. “Endogenous Gentrification and Housing Price Dynamics.” Journal of Public Economics 100:45–60. https://doi.org/10.1016/j.jpubeco.2013.02.001.

Hanlon, W.Walker, and Stephan Heblich. 2022. “History and Urban Economics.” Regional Science and Urban Economics 94 (May):103751. https://doi.org/10.1016/j.regsciurbeco.2021.103751.

Lee, Sanghoon, and Jeffrey Lin. 2018. “Natural Amenities, Neighbourhood Dynamics, and Persistence in the Spatial Distribution of Income.” The Review of Economic Studies 85 (1): 663–94. https://doi.org/10.1093/restud/rdx018.

ECO5108
Applied Machine Learning & Data Analysis

Syllabus - MSc Advanced Economics - ENS Lyon

2024/2025

I Instructors

Name	Email	Office
- Louise Inguere	louise.inguere@ens-lyon.fr	D4.007
- Vincent Bagilet	vincent.bagilet@ens-lyon.fr	D4.018

II Course Objectives and Overview

In nearly all aspects of the modern society, our daily worldwide data production reaches so extravagant volumes that an unprecedented milestone was recently crossed and start to be pointed out in the tech community. That is, nowadays more data is produced per second than what we could actually be able to objectively process.

Still, in parallel, the techniques to process high and complex volumes of data are evolving fast, and have started to propagate in all research domains. While talking about a 'revolution' seems quite melodramatic, these advances in data processing have permitted to consider new sources of data, encoded into high-dimensional structures - such as `images`, `spatial` or `textual` data - as inputs to address many important questions in social sciences. As a consequence, applied scientists have become increasingly interested in seizing the opportunity offered by Machine Learning techniques during the past decade. Indeed, transforming these data into simpler but meaningful representations before including them in their analysis have permitted to unlock previously unanswered viewpoints or applications.

Consequently, this course aims to provide you with the keys to get a satisfying understanding of the modern Machine Learning techniques' main principles and models. A specific focus will be directed towards introducing you to various tools and acquiring a strong practical experience. By experimenting on many data formats, the objective is that you can then fully consider using those to conduct original research projects in the future. To do so, lectures will span from a selected theoretical base to a fully practical approach using `Python`, providing you with intuitions and preventive alerts on the good practices and pitfalls of this field of study.

III TOPICS COVERED

Machine Learning Theory:

- General mathematical concepts and history
- Main ML models overview
- Artificial Neural Networks and Deep Learning
- Optimization and evaluation techniques
- Comparative advantages and limits
- Insights on common errors and best practices
- *Examples of use-cases*

Applications on Spatial Data:

- Python general review
- Manipulating images, shapes, geo-referenced and temporal data
- *Python standard libraries:* handling and analyzing data
- *Python ML libraries*: processing, predicting, and evaluating
- *Introduction to Github:* package replication
- *GIS tools:* QGIS and Google Earth

Applications on Textual Data:

- Finding and wrangling text data
- Dictionary-based methods
- Topic Modeling
- Word Embeddings
- Deep learning methods



Figure 1 – Data sources illustrations. *Sources: Unsplash*

IV SCHEDULE

The course is composed of eight 3-hours sessions, each mixing theory and practice. The last session will be dedicated to the restitution of your final work, to collectively broaden your applications ideas and to encourage you in pursuing looking for new datasets and/or angles of analysis in the future.

	Date	**Time**	**Object**
1	Monday Nov. 4	*1pm - 4pm*	Introduction course
2	Wednesday Nov. 6	*1pm - 4pm*	Main course 1
3	Wednesday Nov. 13	*1pm - 4pm*	Main course 2
4	Monday Nov. 18	*1pm - 4pm*	Main course 3
5	Friday Nov. 22	*1pm - 4pm*	Main course 4
6	Wednesday Nov. 27	*1pm - 4pm*	Main course 5 (text-specific)
7	Friday Nov. 29	*1pm - 4pm*	Main course 6 (text-specific)
8	Monday Dec. 2	*1pm - 4pm*	Final project
9	Monday Dec. 9	*1pm - 4pm*	Final project restitution

This schedule is also accessible via your Google Agenda. If any changes are made to the calendar, the Google Agenda will be updated consequently, and you will also receive a preventive notification by e-mail.

V PREREQUISITES

No specific knowledge is required to attend this class, except for the programming experience gained by having attended the various practical courses (using Stata, R, Python) which were part of the MSc program. In particular, this course can be seen as the continuity of the introduction to Python course, delivered in Master 1, hence familiarity with contents of this course is assumed.

If you did not attend those classes and you did not have any prior introduction to Python during your studies, please indicate it to the instructors during the first session, so that it is taken into consideration. However do not worry, the exercises have been organized with a very gradual difficulty so that everyone can learn at their own pace.

Some other programming experience is, of course, a plus and should let you dive deeper in the course's application exercises.

VI TECH RESOURCES

As each session will include practice, you should come to class with a computer with administrator rights and a working internet connection. For practical exercises and assignments, we will make use of **Jupyter notebooks**, a flexible format which supports code, formatted text and beautiful visual layouts.

To be able to write and execute notebooks, you may choose between the following options:

— **Recommended:** Install **Python** on your computer, by installing an **Anaconda** distribution (Python version 3.10 or above). You have the choice between the classic **Anaconda** full app, or the lighter alternative **Miniconda**, depending on the free space you have on your computer and your programming experience (see this guide for choosing between both). In any case, it provides access to all standard modules used for scientific computing and enables effective modules management, while letting you in control of what is saved on your computer.

Note that Anaconda already integrates a graphical interface and some programming environments (which is why it is heavier), whereas in addition to Miniconda you shall install a development environment of your choice that supports notebooks, such as **Visual Studio Code** or **JupyterLab**. VS Code supports a wide range of programming languages, making this software's installation profitable for any of your other programming projects. On the other hand, Jupyter is the native environment for notebooks. Both stand as good options.

— **Alternative:** Use the Google Colab remote environment (which requires a Google account). It offers an alternative as it does not necessitate to install anything on your laptop, however it has the drawbacks of not being in control of what is accessible to you, of requiring an internet access and also of being dependent of Google's policy.

In any case, installation issues will be addressed during the first session.

VII GRADING

You will be assessed on both your regular participation and on your final project:

— **Regular participation (40%):** During each class, engaging actively by participating in discussions and regular quizzes, along with fulfilling the minimal required parts of the practical exercises of each lesson will guarantee you the maximal grade for participation. Note that the quizzes answers are not evaluated, they are used as inclusive learning tools rather than tests in this course. The exercises (Jupyter notebooks to be completed) have to be fulfilled individually. You will have to submit them on the course's deposit within the allocated time, which is before the next session, i.e. you have until midnight of the previous day before next class. This allows you to either finish and drop it directly during the current class or to take your time to finish it throughout the week.

— **Final project (60%):** At the end of the course's cycle, you will have to conduct a final application project by groups of two. Each group will select both a research question and an original data source, and will have to put into practice all aspects of what was learned during the course to extract, process, predict, evaluate and analyze the chosen data. The 3-hours session of Monday, December 2nd is fully dedicated to starting the programming part of this final project with the assistance of the instructors. Then, you will have time to finish your code and analysis as a homework, before submitting your work on the course's deposit. Finally, the last session will consist of a short presentation from each group to describe its data and analysis, accompanied with a discussion on the applications of each methodology.

REFERENCES

Ash, E. and Hansen, S. (2023), 'Text Algorithms in Economics', Annual Review of Economics **15**(1), 659–688.

Burke, M., Driscoll, A., Lobell, D. B. and Ermon, S. (2021), 'Using satellite imagery to understand and promote sustainable development', Science **371**(6535), eabe8628.

James, G., Witten, D., Hastie, T., Tibshirani, R. and Taylor, J. (2023), An Introduction to Statistical Learning: with Applications in Python, Springer Texts in Statistics, Springer International Publishing.

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Storm, H., Baylis, K. and Heckelei, T. (2019), 'Machine learning in agricultural and applied economics', European Review of Agricultural Economics **47**(3), 849–892.

ENS Lyon

Master in Economics

Experimental Economics

Syllabus

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Fall 2026

This document is subject to change ***[last update: April 17, 2024]***

1 Basic Information

1.1 Contacts

Teacher: Fabio Galeotti
Researcher, CNRS
office: -
office hours: after lecture/by appointment
e-mail: fabio.galeotti@cnrs.fr

1.2 Set-up

The module will be taught by means of a weekly 6-hour lecture/tutorial for a duration of 4 weeks.

1.3 Prerequisites

The module assumes that students have reasonable prior working knowledge of microeconomic theory, (especially decision-making under risk and uncertainty, and game theory), and econometrics. There are linkages between this module and Microeconomics I, Microeconomics II, and Econometrics; the game theory component Microeconomics I and II is especially useful to get the most out of this module.

2 Course Overview

2.1 Content

The course provides an introduction to the experimental methods used in economics to study behavior under controlled conditions. It is divided into two parts. The first part considers the rationale for experimentation in economics; it examines several of the ways in which experiments have been used; and it seeks to appraise the contribution experiments have made, and can be expected to make, in a variety of areas of economics, such as individual decision making, markets, coordination, negotiation, charitable giving, public goods games, social preferences, and lying behavior.

The second part concerns experimental methods, and focuses on how to design an experiment. Students will learn how to formulate their own behavioral research questions and hypotheses, and develop an experimental design for collecting and analyzing data.

2.2 Goal, Approach, and Learning Outcomes

The course provides graduate research training in experimental economics, and is useful either for students wishing to become academic economists or for students wishing to develop a career in a wide range of fields where knowledge of behavioral or experimental economics can prove useful, such as teaching, finance, banking, business, consulting and government.

The course also promotes the following transferable skills which are essential for any graduate job: oral and written communication skills (by presenting and writing a critical review of cutting-edge work in experimental economics), critical thinking skills (by critically reading, discussing, and summarizing breakthrough work in experimental economics), analytical skills (by assessing the analysis of experimental papers), and research skills (by identifying a research question and designing a research experiment).

Upon completion of the course, we expect students to be:

• Familiar with some of the major areas of research in experimental economics;

• Able to understand, critically assess and analyze experimental papers;

• Able to understand some of the strengths and limitations of experiments in economics;

• Able to sketch the design of a simple research experiment in economics.

The teaching approach is research-led. Each week, the lecture focuses on a few ‘key readings’ which all students should have read in advance. Students are asked to open the discussion with a brief critical summary of one of these key readings, followed by questions by the other students. As a part of the course assessment, each student is required to develop a project concerning the design of a research experiment. Students will receive a one-to-one guidance on the project throughout the course. Finally, students will learn about the experimental methods and facilities used by the researchers at the Groupe d'Analyse et de Théorie Economique (GATE), and be invited to attend workshops and seminars in experimental economics organized by GATE.

2.3 Lectures and tutorials

The first part of the course provides an overview of the main areas of experimentation in economics, discussing the main contribution experiments have made. The second part focuses on experimental methods, from the design of an experiment to the main techniques used to analyze experimental data.

Every week, a student or a group of students will introduce the topic covered in the lecture by giving a brief critical summary of a key reading of their own choice (no presentations in week 1). Failing to present will result in a grade of 0 for that assignment.

For the project, each student will have to formulate an original behavioral research question, and develop an experimental design to test it. The research question can be based on an existing research paper and be a variation of the original question, or concerns a completely new idea. Each student is expected to write a document reviewing the related literature, presenting the research Failing to develop the project will result in a grade of 0 for this coursework.

2.4 Credits and Examination

Course grade is determined as follows: 10% from participation in class, 45% from critical summary of a key reading, and 45% from project.

3 Reading List

Particularly useful texts are:

Camerer, C. (2003), Behavioral Game Theory: Experiments in Strategic Interaction, Princeton University Press.

Friedman, D. and S. Sunder (1994), Experimental Methods: A Primer for Economists, Cambridge University Press.

Moffatt, P. G. (2015). Experimetrics: Econometrics for experimental economics. Macmillan International Higher Education.

Jacquemet N., L'Haridon O. (2018). Experimental Economics: Method and Applications. Cambridge University Press.

Siegel, S., & Castellan, N. J., Jr. (1988). Nonparametric statistics for the behavioral sciences (2nd ed.). New York, NY, England: Mcgraw-Hill Book Company.

Other useful texts include:

Bardsley, N., Cubitt, R., Loomes, G., Moffat, P., Starmer, C., & Sugden, R. (2010). Experimental economics: Rethinking the rules. Princeton University Press.

Camerer, C.F., G. Loewenstein and M. Rabin, eds. (2004), Advances in Behavioral Economics, Princeton University Press.

Charness, G., & Pingle, M. (Eds.). (2021). The Art of Experimental Economics: Twenty Top Papers Reviewed. Routledge.

Davis, D and C. Holt (1993), Experimental Economics, Princeton University Press.

Kagel, J. and A. Roth, eds. (1995). The Handbook of Experimental Economics, Princeton University Press.

Kagel, J. H., & Roth, A. E. (2016). The Handbook of Experimental Economics, Volume 2. Economics Books, 2.

Schram, A., & Ule A. (2019). Handbook of Research Methods and Applications in Experimental Economics, Edward Elgar Publishing.

Articles and Papers (in bold the key readings):

- *Introduction to Experimental Economics*

Binmore, Ken (1999) "Why Experiment in Economics?" Economic Journal, 109(453), F16-F24.

Croson, Rachel and Simon Gächter (2010) "The science of experimental economics", Journal of Economic Behavior and Organization, 73, 122-131.

Guala, F. (2002), "On the scope of experiments in economics: Comments on Siakantaris", Cambridge Journal of Economics, 26, 261-267.

Loewenstein George (1999) "Experimental Economics From the Vantage-point of Behavioural Economics", Economic Journal, 109(453), F25-F34.

Loomes, Graham (1999). "Some lessons from past experiments and some challenges for the future", The Economic Journal, 109(453), F35-F45.

Nagel, R. (1995). Unraveling in guessing games: An experimental study. The American Economic Review, 85(5), 1313-1326.

Plott, Charles R. (1991) "Will Economics Become an Experimental Science?" Southern Economic Journal, 57(4), 901-919.

Roth, Alvin E. (1988) "Laboratory Experimentation in Economics: A Methodological Overview", Economic Journal, 98(393), 974-1031.

Roth, A. E. (1993). On the early history of experimental economics. *Journal of the History of Economic Thought*, *15*(2), 184-209.

Siakantaris, N. (2000), "Experimental economics under the microscope", Cambridge Journal of Economics, 23, 267-281.

Sims, Christopher A. (2010) "But Economics Is Not an Experimental Science", Journal of Economic Perspectives, 24(2), 59-68.

Smith, Vernon L. (1982) "Microeconomic Systems as an Experimental Science", American Economic Review, 72(5), 923-955.

Smith, Vernon L. (1989) "Theory, Experiment and Economics", Journal of Economic Perspectives, 3(1), 151-169.

Smith, Vernon L. (1994) "Economics in the Laboratory", Journal of Economic Perspectives, 8(1), 113-131.

Starmer, Chris (1999) "Experimental Economics: Hard Science or Wasteful Tinkering?" Economic Journal, 109, F5-F15.

- *Choice Under Risk and Uncertainty*

Cubitt, Robin, Chris Starmer and Robert Sugden (1998) "On the validity of the random lottery incentive system", Experimental Economics, 1, 115-131.

Grether, David M. and Charles R. Plott (1979) "Economic theory and the preference reversal phenomenon", American Economic Review 69 (1979), 623-638.

Gneezy, U., & Potters, J. (1997). An experiment on risk taking and evaluation periods. The quarterly journal of economics, 112(2), 631-645.

Hey, John and Chris Orme (1994) "Investigating generalisations of expected utility theory using experimental data", Econometrica, 62, 1291-1326.

Holt, C. A., & Laury, S. K. (2002). Risk aversion and incentive effects. American economic review, 92(5), 1644-1655.

Kahneman, Daniel and Amos Tversky (1979) "Prospect theory: an analysis of decision under risk", Econometrica, 47, 263-291

Starmer, Chris (2000) "Developments in non-expected utility theory: the hunt for a descriptive theory of choice under risk", Journal of Economic Literature, 38, pp. 332-382.

Starmer, Chris and Robert Sugden (1993) "Testing for juxtaposition and event-splitting effects", Journal of Risk and Uncertainty, 2, 235-254.

Sugden, Robert and Chris Starmer (1989) "Probability and juxtaposition effects: an experimental investigation of the common ratio effect", Journal of Risk and Uncertainty 2, 159-178

Tversky, Amos and Daniel Kahneman (1992) "Advances in prospect theory: cumulative representation of uncertainty", Journal of Risk and Uncertainty, 5, 297-323.

- *Contingent Valuation*

Bateman, Ian, Alistair Munro, Bruce Rhodes and Robert Sugden (1997) "A test of the theory of reference-dependent preferences". Quarterly Journal of Economics, 112, 479-505.

Horowitz, John K., and Kenneth E. McConnell (2002) "A Review of WTA/WTP Studies." Journal of Environmental Economics and Management, 44, 426–447.

Kahneman, Daniel, Jack Knetsch and Richard Thaler (1990) "Experimental tests of the endowment effect and the Coase Theorem". Journal of Political Economy, 98, 1325-1348.

Knetsch, J. L. (1992). Preferences and non-reversibility of indifference curves. Journal of Economic Behavior & Organization, 17(1), 131-139.

Shogren, Jason, Seung Shin, Dermot Hayes and James Kliebenstein (1994). "Resolving differences in willingness to pay and willingness to accept". American Economic Review 84, 255-270.

- *Market Experiments*

Chamberlin, Edward H. (1948) "An Experimental Imperfect Market", Journal of Political Economy, 56(2), 95-108.

Smith, Vernon L. (1962) "An Experimental Study of Competitive Market Behavior", Journal of Political Economy, 70(2), 111-137.

Smith, Vernon L. (1976) "Experimental Economics: Induced Value Theory", American Economic Review: Papers & Proceedings, 66(2), 274-279.

Lei, Vivian, Noussair, Charles .N. and Charles R. Plott (2001), "Nonspeculative bubbles in experimental asset markets: Lack of common knowledge of rationality vs. actual irrationality", Econometrica, vol. 69, pp. 831-859.

Kirchler, Michael, Jürgen Huber and Thomas Stöckl (2012) "Thar She Bursts: Reducing Confusion Reduces Bubbles", American Economic Review, 102(2), 865-883.

Smith, Vernon L., Gerry Suchanek and Arlington W. Williams (1988) "Bubbles, Crashed, and Endogenous Expectations in Experimental Spot Asset Markets", Econometrica, 56(5), 1119-1151.

- *Social Preferences and bargaining*

Berg, Joyce, John Dickhaut and Keven McCabe (1995) "Trust, Reciprocity and Social History", Games and Economic Behavior, 10, 122-142.

Bolton, Gary E. and Axel Ockenfels (2000) "ERC: A Theory of Equity, Reciprocity, and Competition", American Economic Review, 90(1), 166-193.

Camerer, Colin and Richard H. Thaler (1995) "Anomalies: Ultimatums, Dictators and Manners", Journal of Economic Perspectives, 9(2), 209-219.

Charness, Gary and Matthew Rabin (2002) "Understanding Social Preferences with Simple Tests", Quarterly Journal of Economics, 117(3), 817-869.

Chen, Yan and Sherry Xin Li (2009) "Group Identity and Social Preferences", American Economic Review, 99(1), 431-457.

Cox, James C. (2004) "How to identify trust and reciprocity", Games and Economic Behavior, 46, 260-281.

Eckel Catherine C. and Philip J. Grossman (1996) "Altruism in Anonymous Dictator Games", Games and Economic Behavior, 16, 181-191.

Engelmann, Dirk and Martin Strobel (2004) "Inequality Aversion, Efficiency, and Maximin Preferences in Simple Distribution Experiments", American Economic Review, 94(4), 857-869.

Fehr, Ernst and Klaus M. Schmidt (1999) "A Theory of Fairness, Competition and Cooperation", Quarterly Journal of Economics, 114(3), 817-868.

Fehr, Ernst and Urs Fischbacher (2002) “Why Social Preferences Matter – The Impact of non-Selfish Motives on Competition, Cooperation and Incentives”, Economic Journal, 112(478), C1-C33.

Forsythe, Robert, Joel L. Horowitz, N.E. Savin and Martin Sefton (1994) “Fairness in Simple Bargaining Experiments”, Games and Economic Behavior, 6, 347-369.

Galeotti F., M. Motero, M., and A. Poulsen (2019) "Efficiency versus Equality in Bargaining", Journal of the European Economic Association, 17 (6), 1941-1970.

Galeotti, F., Montero, M., & Poulsen, A. (2021). The attraction and compromise effects in bargaining: Experimental evidence. Management Science.

Galeotti F., and D.J. Zizzo (2018), “Identifying voter preferences: The trade-off between honesty and competence”, European Economic Review, 105, 27-5.

Güth, Werner, Rolf Schmittberger and Bernd Schwarz (1982) “An Experimental Analysis of Ultimatum Bargaining”, Journal of Economic Behavior and Organization, 3, 367-388.

Güth, Werner and Martin G. Kocher (2014) “More than thirty years of ultimatum bargaining experiments: motives, variations, and a survey of the recent literature”, Journal of Economic Behavior and Organization, 108, 396-409.

Henrich, J., Boyd, R., Bowles, S., Camerer, C., Fehr, E., Gintis, H., & McElreath, R. (2001). In search of homo economicus: behavioral experiments in 15 small-scale societies. American Economic Review, 91(2), 73-78.

Hoffman, Elizabeth, Keven McCabe and Vernon L. Smith (1996) “Social Distance and Other-Regarding Behavior in Dictator Games”, American Economic Review, 86(3), 653-660.

Niederle, M., & Vesterlund, L. (2007). Do women shy away from competition? Do men compete too much?. *The quarterly journal of economics*, *122*(3), 1067-1101.

Rabin, Matthew (1993) “Incorporating Fairness into Game Theory and Economics”, American Economic Review, 83(5), 1281-1302.

Roth, A. E., Prasnikar, V., Okuno-Fujiwara, M., & Zamir, S. (1991). Bargaining and market behavior in Jerusalem, Ljubljana, Pittsburgh, and Tokyo: An experimental study. The American economic review, 1068-1095.

Sobel, Joel (2005). Interdependent preferences and reciprocity. Journal of economic literature, 43(2), 392-436.

- *Social and Moral Dilemmas*

Abeler, J., Nosenzo, D., & Raymond, C. (2019). Preferences for truth-telling. *Econometrica*, *87*(4), 1115-1153.

Andreoni, James (1988) “Why Free Ride? Strategies and Learning in Public Goods Experiments”, Journal of Public Economics, 37, 291-304.

Andreoni, James (1995) “Cooperation in Public-Goods Experiments: Kindness or Confusion?”, American Economic Review, 85(4), 891-904.

Andreoni, James (1995) “Warm-Glow Versus Cold-Prickle: The Effects of Positive and Negative Framing on Cooperation in Experiments”, Quarterly Journal of Economics, 110(1), 1-21.

Casoria, F., Galeotti, F., & Villeval, M. C. (2021). Perceived social norm and behavior quickly adjusted to legal changes during the COVID-19 pandemic. Journal of Economic Behavior & Organization, 190, 54-65.

Chaudhuri, Ananish (2011) “Sustaining cooperation in laboratory public goods experiments: a selective survey of the literature”, Experimental Economics, 14, 47-83.

Fehr, Ernst and Simon Gächter (2000) “Cooperation and Punishment in Public Goods Experiments”, American Economic Review, 90(4), 980-994.

Fischbacher, U., & Föllmi-Heusi, F. (2013). Lies in disguise—an experimental study on cheating. Journal of the European Economic Association, 11(3), 525-547.

Galeotti, F., Maggian, V., & Villeval, M. C. (2021). Fraud Deterrence Institutions Reduce Intrinsic Honesty. The Economic Journal, 131(638), 2508-2528.

Gneezy, Uri. 2005. "Deception: The Role of Consequences." American Economic Review, 95 (1): 384-394.

Gneezy, Uri, Agne Kajackaite, and Joel Sobel (2018) “Lying Aversion and the Size of the Lie”, American Economic Review, 108(2), 419-53.

Hermann, Benedikt, Christian Thöni and Simon Gächter (2008) “Antisocial Punishment Across Societies”, Science, 319, 1362-1367.

Krupka, E. L., & Weber, R. A. (2013). Identifying social norms using coordination games: Why does dictator game sharing vary?. Journal of the European Economic Association, 11(3), 495-524.

Sefton, Martin, Robert Shupp and James M. Walker (2007) “The Effect of Rewards and Sanctions in Provision of Public Goods”, Economic Inquiry, 45(4), 671-690.

Sutter, M. (2009). Deception through telling the truth?! Experimental evidence from individuals and teams. *The Economic Journal*, *119*(534), 47-60.

- *Experimental Methods*

Abeler, Johannes, and Daniele Nosenzo (2015), “Self-selection into laboratory experiments: pro-social motives versus monetary incentives”, Experimental Economics, 18, 195-214.

Alekseev, Aleksandr, Gary Charness, and Uri Gneezy (2017) “Experimental methods: When and why contextual instructions are important”, Journal of Economic Behavior & Organization, 134, 48-59.

Brandts, Jordi, and Gary Charness (2011) “The strategy versus the direct-response method: a first survey of experimental comparisons”, Experimental Economics 14, 375-398.

Casari, Marco (2005), “On the design of peer punishment experiments”, Experimental Economics, 8, 107-115.

Charness, Gary, Uri Gneezy, and Brianna Halladay (2016) “Experimental methods: Pay one or pay all”, Journal of Economic Behavior & Organization, 131, 141-150.

Charness, Gary, Uri Gneezy, and Austin Henderson (2018) “Experimental methods: Measuring effort in economics experiments”, Journal of Economic Behavior & Organization 149, 74-87.

Charness, Gary, Uri Gneezy, and Alex Imas (2013) “Experimental methods: Eliciting risk preferences”, Journal of Economic Behavior & Organization, 87, 43-51.

Charness, Gary, Uri Gneezy, and Michael A. Kuhn (2013) “Experimental methods: Extra-laboratory experiments-extending the reach of experimental economics”, Journal of Economic Behavior & Organization, 91, 93-100.

Charness, Gary, Uri Gneezy, and Michael A. Kuhn (2012) “Experimental methods: Between-subject and within-subject design”, Journal of Economic Behavior & Organization 81, 1-8.

Chen, Yan, and Joseph Konstan (2015), “Online field experiments: a selective survey of methods”, Journal of the Economic Science Association, 1, 29-42.

Cleave, Blair L., Nikos Nikiforakis, and Robert Slonim (2013) “Is there selection bias in laboratory experiments? The case of social and risk preferences”, Experimental Economics, 16, 372-382.

Dai, Z., Galeotti, F., & Villeval, M. C. (2017). “Cheating in the lab predicts fraud in the field: An experiment in public transportation”. Management Science, 64(3), 1081-1100.

de Quidt, J., Vesterlund, L., & Wilson, A. J. (2019). Experimenter demand effects. In Handbook of research methods and applications in experimental economics. Edward Elgar Publishing.

Falk, A., & Heckman, J. J. (2009). Lab experiments are a major source of knowledge in the social sciences. science, 326(5952), 535-538.

Fréchette, Guillaume R. (2012) “Session-Effects in the Laboratory”, Experimental Economics, 15(3): 485-498

Fréchette, Guillaume R. and Andrew Schotter (editors), Handbook of Experimental Economic Methodology, Oxford University Press, February 2015

Galeotti, F. (2015), "Do Negative Emotions Explain Punishment in Power-to-Take Game Experiments?", Journal of Economic Psychology, 49, 1–14.

Harrison, Glenn W., and John A. List (2004) “Field experiments”, Journal of Economic literature 42, 1009-1055.

Harrison, Glenn W., Ronald M. Harstad, and E. Elisabet Rutström (2004), "Experimental methods and elicitation of values", Experimental economics, 7, 123-140.

Horton, John J., David G. Rand, and Richard J. Zeckhauser (2011), "The online laboratory: Conducting experiments in a real labor market", Experimental economics, 14, 399-425.

Kachelmeier, Steven J., and Kristy L. Towry (2005) "The Limitations of Experimental Design: A Case Study Involving Monetary Incentive Effects in Laboratory Markets", Experimental Economics, 8, 21-33.

List, John A., Sally Sadoff, and Mathis Wagner (2011) "So you want to run an experiment, now what? Some simple rules of thumb for optimal experimental design" Experimental Economics, 14, 439.

Moffatt, Peter G., and Simon A. Peters (2001), "Testing for the presence of a tremble in economic experiments", Experimental Economics 4, 221-228.

Ortmann, A. (2019). Deception. In *Handbook of research methods and applications in experimental economics*. Edward Elgar Publishing.

Roux, Catherine, and Christian Thöni (2015) "Do control questions influence behavior in experiments?" Experimental Economics, 18, 185-194.

Sitzia, Stefania and Robert Sugden (2011) "Implementing theoretical models in the laboratory, and what this can and cannot achieve", Journal of Economic Methodology, 18, 323-343.

Schlag, Karl H., James Tremewan, and Joël J. Van der Weele (2015) "A penny for your thoughts: A survey of methods for eliciting beliefs", Experimental Economics 18, 457-490.

Smith, Vernon L. (2002), "Method in experiment: Rhetoric and reality", Experimental economics 5, 91-110.

Stoop, J., Noussair, C. N., & Van Soest, D. (2012). From the lab to the field: Cooperation among fishermen. Journal of Political Economy, 120(6), 1027-1056.

Zizzo, Daniel (2010) "Experimenter demand effects in economic experiments", Experimental Economics, 13, 75-98.

Zizzo, Daniel (2013) "Claims and Confounds in Economic Experiments", Journal of Economic Behavior and Organization, 93(1), 186-195.

Development Economics – ECO-5113

Master 2 – Advanced Economics – ENS de Lyon

Mathieu Couttenier & Julia Hélie

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Course description and organization

This course focuses on studying the process of economic development and the economics of developing countries. It explores a variety of essential topics to understand why some countries are poor, how markets operate differently in poor economies, and the main obstacles to economic development. The primary focus of the course will be on empirical and microeconomic studies. It is structured around 6 key topics: education, health, gender, credit markets, agriculture, and conflicts.
The course will include 24 hours of lectures, scheduled as follows: September 10 (2:00pm-4:00pm), September 24 (2:00pm-4:00pm), October 1 (2:00pm-4:00pm), October 8 (2:00pm-4:00pm), October 15 (2:00pm-4:00pm), October 22 (2:00pm-4:00pm), November 4 (8:30am-11:30am), November 5 (8:30am-11:30am), November 18 (8:30am-11:30am) and November 19 (8:30am-11:30am).

Course material and suggested general background readings

A number of academic economics papers will be discussed in class. There is no textbook for this course, but if you are interested in some general background reading related to the topics we will cover, you may be interested in checking out some of the following books.

- De Janvry, Alain, and Elisabeth Sadoulet. *Development Economics: Theory and Practice*. London: Routledge, 2016.
- Ray, Debraj. *Development Economics*. Princeton, N.J: Princeton University Press, 1998.
- Banerjee, Abhijit V., and Esther Duflo. *Poor Economics: Rethinking Poverty and the Ways to End it*. Random House, 2013.

Course evaluation

Course evaluation is based on three key components:

1. ***Research Proposal*** (40%): Students will develop a research proposal that demonstrates their understanding of economic development topics. This proposal should include a clear research question, a review of relevant literature, and a proposed methodology (see guidelines below). The proposal will be evaluated based on its originality, feasibility, and the depth of analysis.
   The proposed research question must be submitted by email to the instructors by 5pm on Friday, November 15, 2024.
   The written research proposal must be submitted by email to the instructors by 5pm on Friday, December 13, 2023.

2. ***Final Exam*** (50%): The final exam will be conducted in class on Wednesday, November 27, 2024. It will assess students' comprehension of the material covered during the course through short answer questions and multiple-choice questions.
3. ***Class Participation*** (10%).

Guidelines for the research proposal:

The research proposal must be no more than 4 pages in length, including graphs, references and any other material. It should be written in LaTeX and submitted as a PDF file with the following title: 'Your surname_research_proposal.pdf'.

The research proposal should include the following items:

1. Research question: a clear statement of your research question, along with a brief motivation for why it is important, its policy implications, and (if any) economic theory it is testing. To choose your research question, you may consider extending an existing paper. You may use anecdotal evidence as a starting point/motivating fact.
2. Literature review: a short review of the relevant theoretical and/or empirical literature on your topic.
3. Empirical strategy: a description of your proposed empirical strategy and (realistic) data sources (including the data that could be collected).
4. Contribution: a clear discussion of how your research will contribute to the existing literature.
5. Challenges: a discussion of the challenges you expect to encounter in your research.

Think of this project as a blueprint for a research paper that contains everything but the findings: you will motivate the question, place it in the literature, and lay out your data sources (if any) and research design. Of course, we do not expect to see any preliminary results.

Topics in Financial Macroeconomics

Lecturers :
Guillaume Coqueret, coqueret@em-lyon.com;
Thomas Lloyd, lloyd@em-lyon.com;

Course of Master 2 – 2nd semester, 2026-2027

1. Overview

This course delves into advanced thematic topics in macroeconomics related to financial markets. The first part focuses (1-4) more on theoretical models while the second one (5-8) is more applied and data-intensive. The outline of the course is as follows:

1. Consumption-based models (C-CAPM) and critiques
2. Rare events and long-term risks
3. Asset pricing with heterogeneous agents
4. Green growth and green financial models (S-CAPM)
5. Production-based asset pricing
6. Fixed-income securities
7. Intertemporal risk
8. Asset-price bubbles

2. Prerequisites

The course builds on previous introductory and intermediate courses in macroeconomics.

3. Practical information

The course has 8 sessions with typically 1 or 2 sessions of 3 hours per week.

4. Bilbiography

Bok, B., Caratelli, D., Giannone, D., Sbordone, A. M., C Tambalotti, A. (2018). Macroeconomic nowcasting and forecasting with big data. *Annual Review of Economics*, 10(1), 615-643.

Chiarella, C., Dieci, R., He, X. Z., C Li, K. (2013). An evolutionary CAPM under heterogeneous beliefs. *Annals of Finance*, 9, 185-215.

Epstein, L. G., C Zin, S. E. (1991). Substitution, risk aversion, and the temporal behavior of consumption and asset returns: An empirical analysis. *Journal of Political Economy*, 99(2), 263-286.

Heikkinen, T. (2015). (De) growth and welfare in an equilibrium model with heterogeneous consumers. *Ecological Economics*, 116, 330-340.

Pástor, Ľ., Stambaugh, R. F., C Taylor, L. A. (2021). Sustainable investing in equilibrium. *Journal of Financial Economics*, 142(2), 550-571.

Tsai, J., C Wachter, J. A. (2015). Disaster risk and its implications for asset pricing. *Annual Review of Financial Economics*, 7, 219-252

Welch, I., C Goyal, A. (2008). A comprehensive look at the empirical performance of equity premium prediction. *Review of Financial Studies*, 21(4), 1455-1508