DIGITAL ECONOMICS

Course title – Intitulé du cours	Digital Economics
Level / Semester – Niveau /semestre	M2 / S1
School – Composante	Ecole d'Economie de Toulouse
Teacher – Enseignant responsable	ERSHOV Daniel
Lecture Hours – Volume Horaire CM	30
TA Hours – Volume horaire TD	
TP Hours – Volume horaire TP	
Course Language – Langue du cours	Anglais
TA and/or TP Language – Langue des TD et/ou TP	Anglais

Teaching staff contacts – Coordonnées de l'équipe pédagogique :

E-mail: daniel.ershov@tse-fr.eu

Office number: T688

Office hours: TBD/Online (placeholder - Wednesday 14:00-16:00). Please e-mail me ahead of coming to set up a 15 minute appointment.

Course's Objectives – Objectifs du cours :

This course will present empirical evidence of how digitization affected markets and economic activity: what is changing but also what remains unchanged. The lectures will also touch on issues of competition policy as they relate to recent anti-trust activity in digital markets.

At the end of the lectures, students should understand the economic models underpinning competition, market power and regulation in digital markets.

Students will also be aware of the main streams and important papers in the large literature examining online markets and digital technology. Students will be exposed to reduced form (i.e., difference-in-differences) and structural (i.e., discrete choice logit) empirical methods of data analysis.

At the end of the lectures, students should be able to apply both sets of tools to real world data.

Prerequisites – Pré requis :

M1-level micro, IO and econometrics courses.

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

Students are expected to read assigned papers and actively participate in classroom discussions.

The class will be held in accordance to health regulations. This means either fully in-person, hybrid in-person/online, or fully online. All students are strongly encouraged to vaccinate in order to protect faculty and fellow students and in order to ensure that classes will continue to be held in person. Even if classes are fully in person, videos of all lectures will be provided to students on the course website.

Students who are ill or who suspect they may be ill are not expected to attend classes in person, but they need to show their participation by watching the videos and answering (open ended, non-graded) questions about them.

Grading system – Modalités d'évaluation :

There are three components to the grade: a take-home assignment (30%), a final exam (60%) and a 10% participation grade.

The take-home assignment will be empirical. Students will be provided with data and asked to use a statistical software package (i.e., STATA, R, Python) to answer questions. Assignments need to be typed. Late assignments will not be accepted without a medical certificate. Students will have two weeks to complete the assignment and are expected to do it individually. Any cases of plagiarism or other academic misconduct will result in a grade of zero.

The final exam will be cumulative.

Bibliography/references – Bibliographie/références :

Note: (***) indicate required reading.

Lecture 1: Intro + Distance

- ***Agrawal, A., & Goldfarb A. (2008). "Restructuring Research: Communications Costs and the Democratization of University Innovation." *The American Economic Review*, 98(4), 1578-1590.

-*** Blum, B. S., & Goldfarb, A. (2006). Does the internet defy the law of gravity?. Journal of international economics, 70(2), 384-405

- Gentzkow, M., & Shapiro, J. M. (2011). "Ideological segregation online and offline." *The Quarterly Journal of Economics*, 126(4), 1799-1839

Lecture 2: Search

- Brynjolfsson, E., & Smith, M. D. (2000). "Frictionless commerce? A comparison of Internet and conventional retailers." *Management science*, 46(4), 563-585

- ***Dinerstein, M., Einav, L., Levin, J., & Sundaresan, N. (2018). Consumer price search and platform design in internet commerce. *American Economic Review*, 108(7), 1820-59.

- ***Hortaçsu, A., & Syverson, C. (2004). "Product differentiation, search costs, and competition in the mutual fund industry: A case study of S&P 500 index funds." *The Quarterly Journal of Economics*, 119(2), 403-456.

- ***Ursu, R. (2019). "The Power of Rankings: Quantifying the Effect of Rankings on Online Consumer Search and Purchase Decisions." *Marketing Science*, 37(4), 530-552.

Lecture 3: Copyright and Innovation

- *** Moser, P., & Voena, A. (2012). Compulsory licensing: Evidence from the trading with the enemy act. American Economic Review, 102(1), 396-427.

-***Nagaraj, A. (2018). Does copyright affect reuse? Evidence from Google Books and Wikipedia. *Management Science*, 64(7), 3091-3107.

- Survey Paper: Varian, H. R. (2005). "Copying and copyright." *The Journal of Economic Perspectives*, 19(2), 121-138

Lecture 4: Reputation Mechanisms

- Banerjee, A. V. (1992). "A simple model of herd behavior." *The Quarterly Journal of Economics*, 107(3), 797-817

- ***Edelman, B., Luca, M., & Svirsky, D. (2017). "Racial discrimination in the sharing economy: Evidence from a field experiment". *American Economic Journal: Applied Economics*, 9(2), 1-22

- Klein, T. J., Lambertz, C., & Stahl, K. O. (2016). "Market transparency, adverse selection, and moral hazard." *Journal of Political Economy*, 124(6), 1677-1713

- ***Luca, M. (2017). "Reviews, reputation, and revenue: The case of Yelp. com", working paper.

- Survey Paper: Tadelis, S. (2016). "Reputation and feedback systems in online platform markets." *Annual Review of Economics*, 8, 321-340

Lecture 5: Media Economics

- *** Angelucci, C., & Cagé, J. (2019). Newspapers in times of low advertising revenues. *American Economic Journal: Microeconomics*, 11(3), 319-64.

- Enikolopov, R., Petrova, M., & Zhuravskaya, E. (2011). "Media and political persuasion: Evidence from Russia." *American Economic Review*, 101(7), 3253-85

-*** Guriev, S., Melnikov, N., & Zhuravskaya, E. (2020). 3G Internet and Confidence in Government. *Quarterly Journal of Economics*, forthcoming.

Lecture 6: Mergers by and on Platforms

-*** Decarolis, F., & Rovigatti, G. (2021). From Mad Men to Maths Men: Concentration and Buyer Power in Online Advertising. *American Economic Review*, forthcoming.

- *** Farronato, C., Fong, J., & Fradkin, A. (2020). Dog eat dog: Measuring network effects using a digital platform merger (No. w28047). National Bureau of Economic Research.

- Li, Z., & Agarwal, A. (2016). Platform integration and demand spillovers in complementary markets: Evidence from Facebook's integration of Instagram. *Management Science*, 63(10), 3438-3458. Li, H. (2019).

Lecture 7: Privacy and Advertising

- ***Goldfarb, A., & Tucker, C. E. (2011). Privacy regulation and online advertising. *Management science*, 57(1), 57-71.

- ***Johnson, G. A., Lewis, R. A., & Reiley, D. H. (2017). When less is more: Data and power in advertising experiments. *Marketing Science*, 36(1), 43-53.

-*** Johnson, G., Shriver, S., & Goldberg, S. (2020). Privacy & market concentration: Intended & unintended consequences of the GDPR. Working paper.

- Survey: Acquisti, A., Taylor, C., & Wagman, L. (2016). The economics of privacy. *Journal of Economic Literature*, 54(2), 442-92.

Lecture 8: Algorithmic Fairness

- ***Cowgill, B. (2019) "Bias and Productivity in Humans and Algorithms: Theory and Evidence from Resume Screening", working paper

- *** Lambrecht, A., & Tucker, C. (2019). Algorithmic bias? An empirical study of apparent gender-based discrimination in the display of STEM career ads. *Management science*, 65(7), 2966-2981.

- ***Li, D., Raymond, L. R., & Bergman, P. (2020). Hiring as exploration (No. w27736). National Bureau of Economic Research.

- Survey: Cowgill, B., & Tucker, C. (2019), "Economics, Fairness and Algorithmic Bias." In preparation for *The Journal of Economic Perspectives*

Lectures 9 and 10: Algorithmic Competition

- *** Calvano, E., Calzolari, G., Denicolo, V., & Pastorello, S. (2020). Artificial intelligence, algorithmic pricing, and collusion. American Economic Review, 110(10), 3267-97.

- ***Miklos-Thal, J. and Tucker, C. (2019) "Collusion by Algorithm: Does Better Demand Prediction Facilitate Coordination Between Sellers?" *Management Science*, Vol. 65(4), pp. 1552–1561.

-*** Assad, S., Clark, R., Ershov, D., & Xu, L. (2021), "Algorithmic Pricing and Competition: Empirical Evidence from the German Retail Gasoline Market", working paper.

-*** Aparicio, D., Metzman, Z., & Rigobon, R. (2021). The pricing strategies of online grocery retailers (No. w28639). National Bureau of Economic Research.

Session planning – Planification des séances :

There are ten 3-hour lectures in the course. Each lecture will be divided into two 90 minute parts.

In each part, we will cover one required reading (***) paper from the reference list.

We may also touch on other papers, policy discussions and news articles as background.

Distance learning – Enseignement à distance :

In case the lectures will move online, they will be held live as an interactive virtual classroom. Students are expected to attend these lectures and actively participate in the discussion. During online electures, I may also ask questions through live quizzes or polls and separate you into small discussion groups. Lectures will be recorded and available for later viewing.

If necessary, the final exam will be done online.