

## DIGITAL ECONOMICS

Course title – Intitulé du cours	Digital Economics
Level / Semester – Niveau / semestre	M2 / S2
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 :**

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Office number: MF420 – Office hours: TBD (placeholder - Wednesday 14:00-16:00)

### **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, attend all classes and actively participate in classroom discussions.

### **Grading system – Modalités d'évaluation :**

There are three components to the grade: a take-home assignment, a final exam and a 5% classroom 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. The 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.

Students are expected to read assigned papers, attend all classes and participate in classroom discussions. If students fail to attend classes and participate they will lose the 5% classroom participation grade.

### **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

#### **Lectures 2+3: Search**

- Brynjolfsson, E., & Smith, M. D. (2000). "Frictionless commerce? A comparison of Internet and conventional retailers." *Management science*, 46(4), 563-585
- \*\*\*Ellison, G., & Ellison, S. F. (2009). "Search, obfuscation, and price elasticities on the internet." *Econometrica*, 77(2), 427-452
- \*\*\*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 4: Copyright and IP**

- \*\*\*Giorcelli, M., & Moser, P. (2017). "Copyright and creativity: Evidence from italian operas"
- \*\*\*Oberholzer-Gee, F., & Strumpf, K. (2007). "The effect of file sharing on record sales: An empirical analysis." *Journal of political economy*, 115(1), 1-42

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

### **Lecture 5: 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"

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

### **Lecture 6: Media Economics**

- \*\*\*Angelucci, C., & Cagé, J. (2018). "Newspapers in times of low advertising revenues" *American Economic Journal: Microeconomics*, ...

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

- Gentzkow, M., Shapiro, J. M., & Sinkinson, M. (2014). "Competition and ideological diversity: Historical evidence from us newspapers." *American Economic Review*, 104(10), 3073-3114

### **Lecture 7: Network Effects and Multi Sided Markets**

- \*\*\*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).

- Intertemporal price discrimination with complementary products: E-books and e-readers. *Management Science*, 65(6), 2665-2694.

- \*\*\*Tucker, C. (2008). Identifying formal and informal influence in technology adoption with network externalities. *Management Science*, 54(12), 2024-2038.

### **Lecture 8: Privacy and Advertising**

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

- \*\*\*Shiller, B., Waldfoegel, J., & Ryan, J. (2018). The effect of ad blocking on website traffic and quality. *The RAND Journal of Economics*, 49(1), 43-63.

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

### **Lecture 9+10: AI**

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

- \*\*\*Lambrecht, A. and Tucker, C. (2019) 'Algorithmic Bias? An Empirical Study into Apparent Gender-Based Discrimination in the Display of STEM Career Ads '. *Management Science*, forthcoming

- \*\*\*E. Calvano, G. Calzolari, V. Denicolò and S. Pastorello (2019). "Artificial intelligence, algorithmic pricing and collusion", mimeo

- \*\*\*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

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

### **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 as background.