

University of Missouri  
Econ 4004W-01/7001-01 Writing Intensive– Economics in the Digital Era  
Fall Semester 2020

“Digitization changes everything” – Jean Tirole (2014 Nobel Prize in Economics)

**Economics 4004W-01/7001-01** meets Tuesdays 3:30-6:00pm in ELLIS LIBRARY (ELLIS AUD).

**Instructor:** Robert Hazel, rahvzr@missouri.edu, Tel: 573-884-4999, Cell: 571-723-3515

**See *Decreasing the Risk Of COVID-19 in Classrooms and Labs*** at the end of the Syllabus

**Office hours:** This semester, we have been asked to have office hours on Zoom only. Please don't hesitate to request a Zoom meeting.

**Course description:** From what we watch, to whom we meet, to how we find out next job, platforms such as Facebook, Amazon, Google, and LinkedIn have come to play a role in almost every decision we make. Along the way, these platforms have become the most valuable companies in the world. This course compares the economics of the digital era with that of the “old economy.” How do information goods differ from physical goods? How do digital markets compare with traditional markets? How are property rights created and maintained in the digital economy? How does competition differ? What is the role of personal data and privacy?

**Course objective and learning outcome:** Gain familiarity with principles of economics applicable to digital markets.

**Prerequisites** Stat 2500 and Econ 3251 or 4351 (or equivalent).

**Required text:** None. Material will be posted on Canvas or available online.

The typical class session will be preceded by some background reading and preparatory discussion questions. Class will be a mix of lecture and discussion.

**Canvas:** This course uses Canvas and students should check the site regularly. Readings will be posted on Canvas.

**Grading:**

Two exams:	15% each, 30% total
Class participation:	20%
Four one-page written peer reviews:	2.5% each, 10% total
Two five-page writing assignments:	20% each, 40% total

For Econ 7001-01 students, the two writing assignments will be eight pages each.

**Important dates:**

Reaction Paper #1 Draft	Tues 10/6
Peer Review Comments	Tues 10/13
Final Paper #1	Tues 10/20
Reaction Paper #2 Draft	Tues 11/17
Peer Review Comments	Tues 12/1
Final Paper #2	Friday 12/11
1st Exam	Thurs 10/8
2nd Exam	Thurs 12/10

**Course requirements and dates assume this class remains an in-person class.**

**Exams** are closed book.

There are no make-up exams, except in the event of a medical or personal emergency. In that case, you will be excused from the exam if and only if you provide me with your justification via e-mail prior to the exam and submit proper documentation in a timely manner. Makeup exams may be substantially different from the original exam.

**Class participation:** Over the course of the semester, each student will be designated to serve as one of several discussion leaders for a single topic or article and in that role will be responsible for carefully reading one or more articles and discussing them with the class. In addition, all students should be familiar with the assigned material and should expect to be called on in class.

**Reaction Papers and Peer Reviews:** The writing component of this course consists of two short reaction papers and four short peer reviews of other students' papers. You will revise each of your two reaction papers once in response to comments you receive from two peer reviews. With permission from the instructor, students who wish to delve more deeply into a single topic may combine their two reaction papers into one longer paper.

- A reaction paper is an essay discussing a topic relating to the economics of the digital era. You should write about a subject that you find interesting. I am looking for a short explanation of the subject, including a summary of different perspectives, and then your own analysis and opinion. You can write your paper as a traditional research paper with an introduction, body, and conclusion or as an OpEd like what you would find in a major newspaper such as the Wall Street Journal. The goal is to apply the lessons of the course to produce an insightful analysis and not just summarize what you read. You will be expected to discuss your reaction paper with the class.
- You do not need to obtain prior approval of your topic, although you are welcome to discuss your topic with me. You should write your reaction papers with the thought that I am the audience, so you do not need to define basic terms and concepts.
- Reaction papers should be at least 5 pages, excluding any tables, graphs, or references. Papers should be double spaced in 12-point font with one-inch margins all around. This semester,

papers will be submitted electronically via Canvas. You should use standard social science conventions for citations and references. For example, use (last name, year) in the text and include the full reference in a list at the end of your paper. See, e.g., <https://www.aeaweb.org/journals/policies/sample-references>

- Reaction papers should be well-structured, well-written, and free of spelling and grammatical errors. You should rewrite and proofread to make your writing better. Poorly written papers will receive a low grade. You are permitted to have your paper reviewed outside of class by a peer who writes well. If you have help from a peer, you should acknowledge the reviewer in your first footnote.

**Peer reviews** are written comments by students on other students' papers that are intended to help the writer to improve his or her paper. The peer reviewer is not expected to be an expert on the subject of the paper, but is expected to evaluate the paper from the perspective of a careful general reader. Is the paper clearly written and logical? If the paper addresses a technical subject, has the writer defined the subject at the outset and provided the necessary factual background? Does the paper contain the elements required in a reaction paper?

The university policy on plagiarism applies to this class. You should provide the sources for all ideas and facts that are not original to you, as well as for all direct quotes and paraphrasing.

**Monitoring of grades on Canvas:** Students are responsible for monitoring their grades on Canvas and for promptly reporting any discrepancies between the grade they think they received on an assignment and the grade reported on Canvas. Any complaints received **more than two weeks after the relevant grade is posted** will not be investigated, nor will the relevant grade be changed.

The average grade for students who regularly attend class is substantially higher than for those who do not. In general, the students who do best are curious, persistent, willing to ask for help, and willing to put in time and effort to improve.

Questions from students are welcome before, during and after class.

**Class outline:** We will generally follow the outline below, and cover about one topic per class (except for the first topic). There will be 2-3 assigned readings each week. (Key to abbreviations below: JEP = Journal of Economic Perspectives; SCDP = Stigler Committee on Digital Platforms Final Report).

**1. The basics – Information goods and public goods; network effects and externalities; two-sided markets, attention markets**

- Information Rules – Varian 1999, ch 1
- Important Features of the Digital Business Environment, in Stigler Committee on Digital Platforms Final Report (SCDP) – 2019, pp 34-43
- Digital Economics – Goldfarb, Journal of Economic Literature 2019
- Digital Economics – Øverby 2018, ch 1 & 2
- Digitization Changes Everything, in Economics for the Common Good – Tirole 2016, ch 14
- The Economics of Two-Sided Markets – Rysman, JEP 2009
- The Economics of Spam – Rao and Reiley, JEP 2012
- The Attention Economy – Hendrix 2019
- Economics of Attention Markets – Evans 2020

**2. Property rights in the digital era – defining and creating property rights; digital property rights; intellectual property**

- Where Do Property Rights Come From? Anderson 2013
- Slices and lumps – Fennell 2019
- Personal Data as Property – S. Hazel, Syracuse Law Review 2020
- Why Data Ownership Is the Wrong Approach to Protecting Privacy – Kerry and Morris, Brookings 2019
- Virtual Property Virtual Rights – Why Contract Law Not Property Law Must be the Governing Paradigm in the Law of Virtual Worlds, Cifrino, Bos. Col. L.R. 2014
- The Case Against Patents – Boldrin and Levine, JEP 2013

**3. Market structure, competition, pricing, switching costs, lock-in**

- SCDP – pp 66-73
- Digital Economics – Øverby 2018, pp 79-82
- Looking at the Stars: Are the Top Firms Really Different? in The Great Reversal – Philippon 2019, ch 13
- The Baumol effect – Why Are Things So Damn Expensive? Helland and Tabarrok 2019
- Zero as a Special Price – Shampan'er, Mktg Sci 2007

**4. Case studies**

- How Big Data Affects Digital Products and the Sale of Advertisements – SCDP pp 44-56

- How Digitization Has Created A Golden Age of Music, Movies, Books, and Television – Waldfogel, JEP 2017
- Pearson’s digital-first strategy and the evolution of the publishing industry
- e-government in Estonia
- For digital case studies ideas, see <http://reports.weforum.org/digital-transformation/go-to-the-case-studies/>

**5. How machine learning is used to “take advantage of” consumers**

- SCDP – pp 57-66
- The End of Asymmetric Information – Tabarrok 2015
- Capitalism’s Addiction Problem – MacGuineas, The Atlantic 2020
- Personalized Pricing in the Digital Era – OECD 2018
- The Quiet Growth of Race Detection Software Sparks Concerns Over Bias – Olson, WSJ August 14, 2020.

**6. Labor and technology**

- Will the Robots Take Our Jobs? – Cowen and Tabarrok debate (9:55)
- Excerpts from The Technology Trap, Replacing and Complementing Technology – Frey 2019
- Why Are There Still So Many Jobs? The History and Future of Workplace Automation – Autor JEP 2015
- Four TED talks on technology and jobs, <https://medium.com/@alejandro.moran/four-1-ted-talks-to-understand-digital-economy-and-its-immediate-consequences-846c2f8811d>
- Review of Moretti, The New Geography of Jobs – Glaeser, AER 2013
- Tech Clusters – Kerr, JPE 2020
- Winning Streak of Big Cities Fades With 2020 Crises – Hilsenrath, WSJ July 2020

**7. Innovation, invention, productivity**

- Peter Thiel interview, [https://youtu.be/i\\_yJTCDU4uE](https://youtu.be/i_yJTCDU4uE) (1:20)
- SCDP – pp 74-78
- A Toolkit of Policies to Promote Innovation – Bloom, JEP 2019
- Are the Big Tech Companies Evil? In Big Business – Cowen 2019, 99-121
- Superforecasting (summary) – Schoemaker and Tetlock, HBR 2016

**8. Measuring the digital economy**

- Measuring the Information Economy (ch 2), in Wired for Innovation – Brynjolfsson 2010
- Evolving Measurement for an Evolving Economy: Thoughts On 21st Century US Economic Statistics – Jarmin, JEP 2019

**9. Privacy economics**

- SCDP – pp 215-227

- From the Economics of Privacy to the Economics of Big Data – Acquisti 2013
- The Economics of Privacy – Acquisti, JEL 2016
- The Enduring Loss of Privacy, in Big Business – Cowen 2019, pp 121-32
- The Economics of the Right to Be Forgotten – Kim, Journal of Law and Economics 2017

#### **10. Cybersecurity**

- The Economics of Cybersecurity: Principles and Policy Options – Moore 2010
- Five Cybersecurity Books That Everyone Should – and Can – Read – Rundle, WSJ June 19, 2020

#### **11. Competition law and economics**

- SCDP – pp 81-92
- Net Neutrality: A Fast Lane to Understanding the Trade-offs – Greenstein, JEP 2016. Also <https://youtu.be/SCYztq0ua3Y>
- The Limits of Antitrust in the 21st Century – Lambert 2020
- Amazon's Antitrust Paradox – Khan, Yale L.J. 2016
- To Regulate or Not, in in The Great Reversal – Philippon 2019, ch 14

#### **12. Trust in the digital era**

- Social capital –An Economic Approach to Social Capital, Glaeser et al, The Economic Journal 2002, F437-440.
- Is Digital Media Pulling Us Apart? (research findings summary)– Gentzkow, May 20, 2020
- Social Media and Fake News in the 2016 Elections – Allcott and Gentzkow, JEP 2017
- Autocracies in the Information Age – Treisman and Guriev, JEP 2019
- The Trust Revolution, The Digitization of Trust – Henderson and Churi, 2019
- How the 1% Scrubs Its Image Online – Levy, WSJ December 2019
- China's social credit system, [https://en.wikipedia.org/wiki/Social\\_Credit\\_System](https://en.wikipedia.org/wiki/Social_Credit_System) and How the West Got China's Social Credit System Wrong – Matsakis, Wired July 2019.
- 'Brushers' Come Into Focus as Officials Test Packages of Mysterious Seeds – Hagerty, WSJ June 2020

#### **13. Special topics**

- The Economics of Online Crime – Moore et al, JEP 2009
- The Basic Economics of Internet Infrastructure, Greenstein, JEP 2020
- Marketplaces, Markets, and Market Design – Roth, AER 2018
- The Long, Unhappy History of Working from Home – NYTimes 2020
- The Economics of Cryptocurrencies – Bitcoin and Beyond – Chiu and Koeppl, 2018

- Why Hackers Use Bitcoin and Why It Is So Difficult to Trace – Vigna, WSJ July 2020
- Law and Economics of Forced Technology Transfers (to China) – Sykes, Stanford Law 2020

**Decreasing the Risk of COVID-19 in Classrooms and Labs (As of July 30, 2020. See updates as posted on <https://renewal.missouri.edu/>)**

MU cares about the health and safety of its students, faculty, and staff. To provide safe, high-quality education amid COVID-19, we will follow several specific campus policies in accordance with the advice of the Center for Disease Control and Boone County health authorities. This statement will be updated as information changes.

- If you are experiencing any COVID-related symptoms, or are otherwise feeling unwell, do not attend in-person classes and contact your health care provider and/or student health immediately. COVID symptoms include: fever greater than 100.4 or chills; cough, shortness of breath or difficulty breathing; fatigue; unexplained muscle or body aches; headache; new loss of taste or smell; sore throat; congestion or runny nose; nausea or vomiting; diarrhea.
- We will all wear face coverings while in the classroom, unless you have a documented exemption due to a disability or medical condition.
- We will maintain a 6-foot distance from each other at all times (except in specific lab/studio courses with other specific guidelines for social distancing).
- We will enter the classroom and fill the room starting at the front, filing all the way across a row. When class ends, we will exit the row nearest to the door first; the instructor or TA will give the signal for the next row to exit, in the same manner.
- In any small section or lab class that requires them, additional measures will be listed in the syllabus and be mandatory for class participation.
- Online office hours will be available for all students.
- This course may be recorded for the sole purpose of sharing the recording with students who can't attend class. The instructor will take care not to disclose personally identifiable information from the student education records during the recorded lesson.

Compliance with these guidelines is required for all; anyone who fails to comply will be subject to the accountability process, as stated in the University's Collected Rules and Regulations, Chapter 200 Student Code of Conduct.

**Academic Integrity**

Academic integrity is fundamental to the activities and principles of a university. All members of the academic community must be confident that each person's work has been responsibly and honorably acquired, developed, and presented. Any effort to gain an advantage not given to all students is dishonest whether or not the effort is successful. The academic community regards breaches of the academic integrity rules as extremely serious matters. Sanctions for such a breach may include academic sanctions from the instructor, including failing the course for any violation, to disciplinary sanctions ranging from probation to expulsion. When in doubt about plagiarism, paraphrasing, quoting, collaboration, or any other form of

cheating, consult the course instructor.

### **Accommodation of Disabilities**

If you anticipate barriers related to the format or requirements of this course, if you have emergency medical information to share with me, or if you need to make arrangements in case the building must be evacuated, please let me know as soon as possible. If disability related accommodations are necessary (for example, a note taker, extended time on exams, captioning), please register with the Disability Center, S5 Memorial Union, 882-4696, and then notify me of your eligibility for reasonable accommodations. For other MU resources for students with disabilities, click on "Disability Resources" on the MU homepage.

### **Intellectual Pluralism**

The University community welcomes intellectual diversity and respects student rights. Students who have questions or concerns regarding the atmosphere in this class (including respect for diverse opinions) may contact the Departmental Chair or Divisional Director; the Director of the Office of Students Rights and Responsibilities (<http://osrr.missouri.edu/>); or the MU Equity Office (<http://equity.missouri.edu/>), or by email at [equity@missouri.edu](mailto:equity@missouri.edu). All students will have the opportunity to submit an anonymous evaluation of the instructor(s) at the end of the course.

### **Academic Inquiry, Course Discussion and Privacy**

University of Missouri System Executive Order No. 38 lays out principles regarding the sanctity of classroom discussions at the university. The policy is described fully in Section 200.015 of the Collected Rules and Regulations. In this class, students may make audio or video recordings of course activity unless specifically prohibited by the faculty member. However, the redistribution of audio or video recordings of statements or comments from the course to individuals who are not students in the course is prohibited without the express permission of the faculty member and of any students who are recorded. Students found to have violated this policy are subject to discipline in accordance with provisions of section 200.020 of the Collected Rules and Regulations of the University of Missouri pertaining to student conduct matters.

### **Title IX**

University of Missouri policies prohibit discrimination on the basis of race, color, national origin, ancestry, religion, sex, gender, gender identity, gender expression, sexual orientation, pregnancy, age, genetic information, disability, and protected veteran status. Discrimination includes any form of unequal treatment such as denial of opportunities, harassment, and violence. Sex-based violence includes rape, sexual assault, unwanted touching, stalking, dating/interpersonal violence, and sexual exploitation. If you experience discrimination, you are encouraged (but not required) to report the incident to the MU Office for Civil Rights & Title IX. Learn more about your rights and options at [civilrights.missouri.edu](http://civilrights.missouri.edu) or call 573-882-3880. You also may make an anonymous report online. Students may also contact the Relationship & Sexual Violence Prevention (RSVP) Center, a confidential resource, for advocacy and other support related to rape or power-based personal violence at [rsvp@missouri.edu](mailto:rsvp@missouri.edu) or 573-882-6638, or go to [rsvp.missouri.edu](http://rsvp.missouri.edu). Both the Office for Civil Rights & Title IX and the RSVP Center can provide assistance to students who need help with academics, housing, or other issues.