OID 955 – Research Seminar in Information Strategy and Economics (ISE) Spring, 2020 (1 cu)

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Overview

Information technology has gone through tremendous changes. This can change the nature of competition and force firms to come up with new ways of organizing work. In particular, recent advances in artificial intelligence and machine learning have the potential to reshape work profoundly. This course uses economic theory to investigate the roles of information and technology in the existing diversity of organizations and markets and in enabling the creation of new organizational forms.

The class is designed for Ph.D. students in management, economics, computer science, information technology, organizational behavior, and related disciplines. It provides an overview of the relevant economics, strategy, information systems and other research literature necessary to do research in the field of Information Strategy and Economics (ISE). While it is intended as a "first course" for OID doctoral students in ISE, it may also be useful for students who are engaged in research or plan to do research related to information technology in other disciplines. For economists, this class offers the opportunity to apply economic tools to understand how information technology and information in general affect organizations and markets. For non-economists, this class offers an exposure to fundamental ideas in the economics of information, organizations, and markets. The main goal is to prepare Ph.D. students to produce high-quality research using tools from information economics.

The principal workload will be regular readings and class participation, as well as a term paper. The course presumes familiarity with intermediate microeconomics and basic statistics/econometrics, although the theoretical foundations for the papers discussed will be reviewed as part of the class.

The workload for the class involves:

Class Discussions. Regular attendance and active participation are necessary for a productive class experience. For students in special circumstances we will arrange a regular schedule of attendance that may not include all sessions. Active participation presumes you have done the readings which will be available electronically on Canvas a week prior to the session along with a reading guide outlining study questions.

Part of class participation is acting as discussion leader during the semester. This includes determining the papers we will cover, guiding the discussion for about half the session (either with or without slides) and most importantly… ordering food.

Short Papers/Problems. Most sessions will have a short question or problem. These need to be completed prior to class and placed in the assignment submission folder on Canvas. Students are permitted to skip 2 (out of 11) over the course of the semester. As such, they need to be done before class (no late submissions). Some are larger than others and I may designated a couple as required as a result. They should be straightforward and will be graded lightly.

Research Paper. There will be a research paper due as part of the class. A three-slide proposal is due by mid-semester (tentatively scheduled for presentation on March 18). The final paper should be "conference

length" (~15-20 pages) and include a comprehensive literature review as well as preliminary results. Topic is flexible, and can include making well-defined progress on an existing project. It should have some type of information economics or information systems flavor.

Grading will be roughly split between in-class performance, short papers, and the research paper.

Topic List (and session order)

We expect to cover (most of) the following topics:

1. *Introduction to Economics of IT and Digitization (1/2 session)
2. *Business Value of IT
3. *Complementarities/IT and Organizations
4. *New applications of IT on organizations: Data Analytics & Innovation (1/2 session)
5. *Economic Impact of AI and Machine Learning (this may involve 3 or more sessions depending on student interests)
   a. *Business value of AI
   b. AI and biases/fairness (1/2 session)
   c. AI and limitations (1/2 session)
   d. AI/robot and jobs
6. *Social Networks and Social Media
7. *Thinking About Opportunities/Project Ideas (1/2 session)
8. *Two-Sided Markets and Platforms
9. IT entrepreneurship
10. Service Markets and 'The Sharing Economy'
11. Advertising Markets and Keyword Auctions
12. a. Reputation and Recommender Systems
    b. Privacy and Reputation systems
13. Healthcare IT
14. IT innovation
15. Information Technology and Human Capital Automation
16. Wikipedia and Collective Intelligence (1/2 session)
17. Measuring Information Economy (1/2 session)
18. Information goods: economics of music movies etc.

On the first day of class we will set out the general topic list based on student interest but certain core topics (see *) will be covered for certain.

There will be no final exam.

Tentative Schedule: subject to change based on student preferences

Date	Topics
Jan 22	Introduction to Economics of IT and Digitization (lynn)
Jan 29	No Class
Feb 5	Business Value of IT (Lynn)
Feb 12	Complementarities /IT org
Feb 19	Economic of AI
Feb 26	Social Networks and Social Media

Mar 4	Spring Break
March 11	Two-sided Markets
March 18	Proposal (10min each + 5 min Q/A)
March 25	
April 1	
April 8	
April 15	
April 22	
April 29	Presentations