Syllabus, Industrial Organization

Course description: The goal of the course is to acquaint students with a subset of the modern literature in theoretical microeconomics, with an emphasis on topics in industrial organization. Students who complete this course should be more prepared to write a theoretical dissertation chapter or paper than they were going in. The course is almost entirely theoretical; this reflects the above goal and what I as the instructor am comfortable with, and not necessarily the state of economics in general or industrial organization as a field. As far as I know, this is the only economics field course offered at the University of Kentucky which is primarily theoretical, so I hope it fills a need in teaching students how to write and solve models.

Contact info: My name is Jeremy Sandford, and I am an assistant professor in the economics department at UK. My email address is jeremysandford@gmail.com. My website is jasandford.com. All course materials, including a detailed *ex post* schedule, will be posted here as they become available.

Office hours: Since the class is so small, I will eschew office hours. If you would like to meet with me, please either stop by when you see my door open or make an appointment in advance by email.

Course work: Your course grade will be based upon the following:

1. There will be 3-5 homeworks, on which group work is allowed. Homeworks will draw questions both from material covered in class and from microeconomics as a whole.

2. You will read an IO paper with a theoretical component, possibly one on the reading list that we do not discuss in class, and prepare an in-class presentation on the paper, to be given as if you were explaining the paper to a graduate class or seminar audience. I will tell you the length of your presentation later in the semester, when I know for sure how many students are in the class.

3. You will complete a paper of your own. On this, you have two options. One, you may write an original, theoretical research paper. This could be an at-least-small extension of an existing paper, or something completely original. This does not need to be dissertation-level research, though it would of course be nice if it eventually turned out that way. Please see me to discuss your topic before you start writing. We may or may not have time for you to present your paper in class. The second option is to complete a thorough literature review on an IO-related topic of your choosing. In choosing a topic, you should choose something specific enough to allow you to perform a thorough review (i.e. "oligopoly" would be a poor choice, but perhaps "buyer power in the agricultural industry" would be appropriate). Also, a topic whose literature is largely empirical would be fine. Whichever option you choose, if it is necessary to produce quality work you may turn in your paper as late as noon on 1/13/2010, the first day of spring classes, without a grade penalty. After that, I will decrease your paper grade by one letter grade per month.

4. You should attend as many micro and/or theoretical seminars and job talks as you are able. You should ask questions in class, pay close enough attention to know when I am being confusing or have made a mistake on the board, and you should be able to help me get to the next step when I get confused.

Grading: Your grade will be 20% homework, 20% your presentation of a paper from the literature, 40% your research paper/literature review, and 20% my subjective evaluation of your attendance, participation, and effort towards the class, including attending IO and micro theory seminars and job talks.

Course materials: We will cover material from chapters 7-9 and 12-14 in the Mas Collel text; you should have access to a copy during the semester. The IO book by Tirole will also be useful for some topics, and is a good basic IO reference.

We will cover some papers without textbook intermediation; as with research, some you will need to read closely enough to determine the main points and accomplishments, others you will need to read thoroughly enough to be able to do the calculations yourself.

Schedule: My aim is to cover the following topics and papers. There is still time to modify this, so if there is a certain topic (that I know something about)[1] that you would like to study, come talk to me and I will try to fit it in to the course schedule. We will deviate from this schedule as time and interests permit/require. 4. and 5. are the most likely to be cut as a result of time constraints.

1. Game theory foundations (**8 classes**, MWG chapters 7-9, Tirole chapter 11)

    (a) Normal form games

    (b) extensive form games

    (c) strategies and solution concepts

    (d) games of imperfect or asymmetric information

    (e) repeated games

2. Price and quantity competition and cartels (**5 classes**, MWG chapter 12, Tirole chapters 5-6, papers)

    (a) Traditional Cournot, Bertrand, and Stackelberg models

    (b) Commitment and observability (Bagwell, K. "Commitment and observability in games," GEB, **54**, pp271-280)

    (c) Collusion and business cycles (Rotemberg, J. and G. Saloner (1986), "A supergame-theoretic model of price wars during booms," AER, **76**, pp390-407)

    (d) Imperfect monitoring (Green, E. and R. Porter (1984), "Noncooperative collusion under imperfect price information," Econometrica, **52**, pp-87-100 Porter, R. (1983), "Optimal cartel trigger price strategies," JET, **29**, pp313-338)

    (e) empirical evidence on cyclicality of price wars. (Porter, R. (1983) "A study of cartel stability: the Joint Executive Committee, 1880-1886," Bell Journal of Economics, **14**, pp301-314 Ellison, G. (1994), "Theories of cartel stability and the Joint Executive Committee," RAND, **25**, pp37-57)

3. Competition through product differentiation (**4 classes**, Tirole chapter 7, papers)

    (a) spatial competition

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[1]this is a considerable limitation!

(b) monopolistic competition (Dixit, A. and J. Stiglitz (1977) "Monopolistic competition and optimum product diversity," American Economic Review, **67**, pp297-308, Gotz, G. (2000) "Sunk costs, windows of profit opportunities, and the dynamics of entry," International Journal of Industrial Organization, **20**, pp1409-1436, Sandford et. al. (2009) "Employer discrimination and market structure," *mimeo*.)

(c) price dispersion models (TBA)

4. Adverse selection, signalling, and screening (**2 classes**, MWG chapter 13)

5. Principal-agent problems (**2 classes**, MWG, chapter 14)

(a) hidden action (moral hazard)

(b) hidden information (screening)

(c) hybrid models

6. Economics of reputation (**5 classes**)

(a) reputation in finitely-repeated games (Kreps, D. and R. Wilson (1982), "Reputation and imperfect information," JET, **27**, pp253-279 Kreps, D., P. Milgrom, J. Roberts, and R. Wilson (1982), "Rational cooperation in the finitely repeated prisoners' dilemma," JET, **27**, pp245-252 Milgrom, P. and J. Roberts (1982), "Predation, reputation, and entry deterrence," JET, **27**, pp280-312)

(b) Reputation in infinitely-repeated games (Mailath, G. and L. Samuelson (2001), "Who wants a good reputation?" ReStud, **68**, pp415-441)

(c) Reputation as a deterrent to good behavior (Ely, J. and J. Valimaki (2003), "Bad reputation," QJE, **118**, pp785-814)

(d) Markets for quacks (Spiegler, R. (2006), "The market for quacks," ReStud, **73**, pp1113-1131, Sandford, J. (2009), "Experts and Quacks," *mimeo*)

(e) Information cascades (Bikhchandani, S., D. Hirshleifer, and I. Welch (1992), "A theory of fads, fashions, custom, and cultural change as information cascades," JPE, 100, pp992-1026)