

ECO 310H1S EMPIRICAL INDUSTRIAL ORGANIZATION

UNIVERSITY OF TORONTO
DEPARTMENT OF ECONOMICS
WINTER 2017

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Lectures: Tuesdays, 14:00 - 16:00. SS 1087
Tutorials: Thursdays, 14:00 - 15:00. SS 1087
Office Hours: TBA

COURSE DESCRIPTION

Industrial Organization is the field of economics that is concerned with the structure of markets and the behaviour of firms in these markets. This course will study the specification and estimation of models of consumer and firm behaviour in oligopoly industries. We will see how these models can be used to understand and quantify firms' market power and its sources, the determinants of market structure, or the implications of exogenous technological and institutional factors on consumer and social welfare in a particular industry. We will examine in detail recent empirical studies that have applied these models and techniques in the context of specific industries. The course emphasizes the importance of combining economic theory and econometric techniques to answer empirical questions in Industrial Organization. Students will gain practical experience working with economic data, and making use of the R statistical programming language.

Prerequisites: ECO200Y1/ECO204Y1/ECO206Y1. ECO220Y1/ECO227Y1 or equivalents. *Note: It is the student's responsibility to ensure they have met the prerequisites for this course.*

Recommended Courses: ECO380H: Markets, Competition, and Strategy. This course covers the theory of Industrial Organization. ECO375H: Applied Econometrics I. This course covers some basic theory of Econometrics.

MEETINGS

Lectures will take place on Tuesdays, from 2pm to 4pm in SS1087. The lectures will consist of slide presentations with some participation opportunities. Note: lecture slides are not a substitute for lecture notes.

There will also be one-hour tutorial sessions or course sessions on Thursdays, from 2pm to 3pm in SS1087. Tutorials will be used to go over examples from the lecture, for exam review sessions, and for instruction on the use of econometric software. Tutorial materials will be posted on the course website as we proceed.

EVALUATION

There are three components to your grade: problem sets (30%), a midterm test (30%), and a final exam (40%).

There will be two problem sets, each worth 15%. Both problem sets will make use of the statistical software R. Problem Set #1 will be handed out early February and will be due two weeks later (February 21). Problem Set #2 will be handed out on early March, and will be due two weeks later (March 21). Please make sure that all answers on your problem sets are typed. Late assignments will not be accepted without a University of Toronto Medical Certificate.

The midterm test is worth 30% of the course grade, and will take place on Tuesday, February 28. The test will be 100 minutes in duration, and will take place during regularly scheduled lecture-time. If you miss the midterm test due to illness or injury, you must send me an email from your UofT email account within 24 hours of the missed test, concisely explaining why you missed the test. You must then provide me with a University of Toronto Verification of Student Illness or Injury form at the earliest possibility. Once the appropriate documentation is submitted and verified, you will have to write a make-up test within one week of the missed test, at a time and date chosen by the instructor, and with as little as one day's notice.

The final exam is cumulative, and worth 40% of the course grade. The exam will be offered during the April examination period at the end of the winter, and will be scheduled by the Faculty of Arts & Science.

COURSE MATERIAL

There is no text book. The course is organized around three recent surveys on Empirical IO and Structural Econometrics (see Main References below). These surveys are key references for this course. The course is also based on published and working academic papers.

However, you are required to have access to the R statistical software. You can get it for free at:

<https://www.r-project.org/>.

In the course we will use the R Studio development interface, that must be installed after R. It is available for free at:

<https://www.rstudio.com/products/rstudio/download/>.

In addition, a useful supplemental econometrics reference is: Jeffrey M. Wooldridge (2008). *Introductory Econometrics: A Modern Approach, 4th or 5th or 6th Edition*. South-Western College Publishers. Note that this book is not required for this course.

MAIN REFERENCES

- [ABBP] Akerberg, D., Benkard, L., Berry, S., & Pakes, A. (2007). "Econometric Tools for Analyzing Market Outcomes," in Handbook of Econometrics, Volume 6, pp. 4171-4276. Available on the authors' website at <http://www.stanford.edu/~lanierb/research/tools8l-6-8.pdf>
- [BR] Berry, S., & Reiss, P. (2007). "Empirical Models of Entry and Market Structure," in Handbook of Industrial Organization, Volume 3, pp. 1845-1886. Available on the authors' website at <http://www.stanford.edu/~preiss/hand-entry.pdf>
- [RW] Reiss, P., and Wolak, F. (2007). "Structural Econometric Modeling: Rationales and Examples from Industrial Organization," in Handbook of Econometrics, Volume 6, pp. 4277-4415. Available on the authors' website at <http://www.stanford.edu/~preiss/makeit.pdf>

WEBSITE

The course web-site is accessible through the University of Toronto Portal. I will use the course web-site as a means of communication with the class, so I recommend you check the announcements regularly. In addition, I will periodically post the lecture slides online.

E – MAIL POLICY

Use e-mails for appointments, administrative matters or urgent issues. Questions about the course, lectures and tutorial material, etc., are more appropriate for office hours. I will normally reply to e-mails within 24 hours. You must use your UofT e-mail address, and include the course number "ECO 310" in the subject line, otherwise your e-mail may be automatically quarantined as "junk e-mail".

ACADEMIC CONDUCT

It is the responsibility of the students to know and understand the provisions of the University of Toronto's Code of Behavior on Academic Matters. All cases of suspected academic misconduct will be referred to the Dean's office.

TEST SCORE APPEALS

Please write a short paragraph explaining why you should obtain additional points. Turn in a hard copy of this by the end of the week following the week in which exams are first handed back. Your **entire** exam will then be re-graded, and your score may go up or down.

IMPORTANT DATES

1. February 21 - Problem Set 1 Due (To be submitted on the course site)
2. February 28 - Midterm Test
3. March 21 - Problem Set 2 Due (To be submitted on the course site)
4. April TBD - Final Exam

LIST OF TOPICS

1. Introduction to the Course. Review of Econometrics.
2. Estimation of Demand, Supply, and Market Power.
3. Estimation of Demand for Differentiated Products.
4. Estimation of Production Functions.
5. Estimation of Static Games of Oligopoly Competition.

REFERENCES

1. Introduction to the Course. Review of Econometrics
 - RW Sections 1 to 5.
 - Church, J., and Ware, R. (2000). "Chapter 12: Identifying and Measuring Market Power," in *Industrial Organization: A Strategic Approach*.
 - Epple, D., and McCallum, B. (2006). "Simultaneous Equation Econometrics: The Missing Example." *Economic Inquiry*, Vol. 44(2), pp. 374-384.

2. Estimation of Demand, Supply, and Market Power
 - RW Section 6
 - Bresnahan, T. (1982). "The Oligopoly Solution Concept is Identified," *Economics Letters*, Vol. 10, pp. 87-92.
 - Genesove, D., and Mullin, W. (1998). "Testing static oligopoly models: Conduct and Cost in the Sugar Industry," *RAND Journal of Economics*, Vol. 29(2), pp. 355-377.

3. Estimation of Demand for Differentiated Products
 - RW Section 7.
 - ABBP Section 1.
 - Berry, S. (1994). "Estimating Discrete-Choice Models of Product Differentiation," *RAND Journal of Economics*, 25(2), 242-262.
 - Berry, S., Levinsohn, J., and Pakes A. (1995). "Automobile Prices in Market Equilibrium," *Econometrica*, 63(4), 841-890.
 - Deaton, A., and Muellbauer J. (1980). "An Almost Ideal Demand System," *American Economic Review*, Vol. 70(3), pp. 312-326
 - Hausman, J., and Leonard, G.K. (2002). "The Competitive Effects of a New Product Introduction: A Case Study," *Journal of Industrial Economics*, Vol. 50(3), pp. 237-263.

4. Estimation of Production Functions
 - ABBP Section 2.
 - Olley, G., and Pakes, A. (1996). "The Dynamics of Productivity in the Telecommunications Equipment Industry". *Econometrica* 64 (6), 1263-1298.

5. Estimation of Static Games of Oligopoly Competition
 - BR All sections.
 - RW Section 10
 - Bresnahan, T., and Reiss, P. (1990): "Entry in monopoly markets", *Review of Economic Studies*, 57, 531-553.
 - Bresnahan, T., and Reiss, P. (1991): "Entry and Competition in Concentrated Markets," *Journal of Political Economy*, 99, 977-1009.