Instructor: Jon Williams          UNC – Chapel Hill               Spring Semester 2019
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# ECON 545: Advanced Topics in Industrial Organization

**Course Description:**

Econ 545 (Advanced Topics in Industrial Organization) applies the theoretical foundations developed in Econ 445 (Industrial Organization), and related courses like Econ 510 (Topics in Microeconomic Theory) and Econ 511 (Game Theory in Economics). The applications take the form of case studies, development of computational models, empirical exercises using real-world data and frontier statistical methods in data science. The topics to be covered include: interaction between firms and consumers in markets that fall outside the benchmark competitive model, how firms acquire and exploit market power, game theory and information economics to analyze how firms interact strategically, price discrimination, collusion/cartels, anti-trust policy, merger analysis, and other regulatory issues.

**Method of Evaluation:**

Assignments (30% = 3 x 10%)
Class Presentations (30% = 3 x 10%)
Participation and Feedback on Classmate's Project (10%)
Final Presentation/Defense of Paper (30%)

At the instructor's discretion, grades will be curved to have a distribution similar to previous sections of 500-level courses in the economics department at UNC.

**Examination Policies and Dates (subject to change for midterms):**

Final Presentation/Defense of Paper: During Scheduled Final
Final Paper Deadline: Friday May 3rd at 8:00am (beginning of scheduled final)

**Readings:**

There will be no mandatory text for the course. The majority of our readings will come from published or working versions of academic papers, case studies, regulatory/government publications, and other sources. For reference to the theoretical concepts we apply in the course, I recommend *Industrial Organization: Contemporary Theory and Empirical Applications* by Pepall, Richards, Norman (4th Edition) and *Game Theory for Applied Economists* by Gibbons (1st Edition), and *An Introduction to Statistical Learning* by James, Witten, Hastie, and Tibshirani.

**Sakai:**

I will use Sakai (or other agreed upon electronic means) to distribute notes, readings, homework assignments, etc. Please verify that you can log on to Sakai and access the

information for this class.  Attendance is still extremely important as materials will periodically be distributed in the classroom without prior notification.

**Assignments/Paper:**

These assignments are the core of this course (30% of final grade), given the strong focus on applications.  I will post a total of three assignments to Sakai (or other agreed upon electronic means) two weeks before they are due. You are welcome to work with other students on the assignments (maximum of 3), but everyone must turn in his or her own version of the homework. Your assignment must clearly reflect your own work and should not contain verbatim passages from your classmates' assignments. Late work will receive no credit.  We will discuss answers to the assignments in class after they are turned in.

In addition to assignments, you will work in a group (maximum of 3) to identify, analyze, and present your findings regarding a recent or ongoing policy/regulatory topic (e.g. merger policy in telecommunications, pharmaceutical price controls, etc.).  This topic will be identified by the end of the second week of class (must be approved by instructor).  The final results of your analysis will be presented and defended during the scheduled final time (or slightly before based on enrollment), and a copy of your paper (at least 10 pages) must be turned in by the date of the final.  The content of the presentation must consist of careful and thoughtful analysis of the economic issues surrounding your chosen topic.  The presentation should last approximately 25 minutes, followed by 5 minutes of questions by the instructor (oral defense). The first part of the presentation should motivate the importance of the topic, and identify and analyze the economic issues of interest.  The second part of the presentation should evaluate/critique existing policy (or absence of), provide recommendations/guidelines for optimal policy, or offer support for why policy guidance can't be given.  To accomplish this end, periodically throughout the semester you'll be asked to briefly present progress to the class, and you are also expected to seek out mentoring/guidance from me during and/or outside office hours multiple times throughout the semester.  Further, 10% of your grade is offered as incentive to provide feedback to your classmates on their presentations throughout the semester (3 of which count for 30% of your grade).  You should view this task as similar to what might be asked of you if you were employed at a consulting firm or federal regulator.

**Classroom etiquette:**

My goal is to maintain a classroom environment that provides a good learning environment for everyone. To minimize distraction, you must turn off all cell phones, laptops, and other electronic devices during class, unless explicitly instructed otherwise, as there may be times during the course that an open laptop is appropriate and desirable. I expect you to arrive on time and prepared for the day's class.

**Teaching assistants:**
   We will not have a teaching assistant for the class.

**Academic integrity:**
   You are encouraged to work together with other students on the homework. However, each
   student must write up her or his own version of the homework assignment. Exams are taken
   individually, without any help from other students or unapproved resources. Each student is
   expected to maintain academic integrity and follow the UNC Honor System.

**Tentative Course Outline (order/content subject to change at instructor's discretion):**

*Background and Examples From My Research*
   - Telecommunications, Airlines, and Pharmaceuticals

*Merger Analysis:*
   - Review of current horizontal merger guidelines
   - Case study of approved/failed/proposed telecom mergers - AT&T/DirecTV,
     Comcast/TWC, Charter/TWC
   - Case study of mergers and forced divestiture of assets – United/Continental,
     American/US-Air
   - Related academic papers:  Pesendorfer (RJE, 2003), Pesendorfer (RJE, 2005),
     Jacquemin and Slade (HIO), Nocke and Whinston (JPE, 2010), DOJ (1997), Carlton
     (WP, 2009), Whinston (HIO, 2007), Houde (AER, 2012), Allen/Clark/Houde (AER,
     2014).
   - Computational modeling and simulation (HW#1):  Build a computational model to
     simulate effects of recent mergers.  Compare the model's predictions to actual
     outcomes, and discuss potential limitations and extensions of the model.

*Collusion/Cartels and Antitrust:*
   - Discussion of US statutes on anti-competitive behavior
   - Review of relevant models of oligopoly
   - Case study on collusive practices in banking –  manipulation of LIBOR
   - Related Academic papers: Shepard (JPE), Athey (ReStud), Bernheim and Whinston
     (RJE), Froeb (IJIO), Porter (RJE), Ciliberto and Williams (RJE), Froeb (IJIO), Snider
     and Youle (WP, 2015), Youle (WP, 2015), Houde (AEJ, 2013), Clark and Houde
     (JIE, 2014), Carlton (WP, 2003), Kaplow and Shapiro (WP, 2007), Segal and
     Whinston (2007).
   - Empirical Application (HW #2): Test for collusion among airlines using current data
     to investigate DOJ's recent inquiry into collusive pricing following consolidation in
     the industry.

*Acquisition and Exploitation of Market Power:*
   - Review of relevant oligopoly models
   - Case Study on predatory pricing – DOJ v. American Airlines
   - Case study on patent settlements – FTC v. Activis Inc
   - Related Academic papers:  Ordover and Saloner (HIO), Schmalensee (BELL, 1978),
     Goolsbee and Syverson (QJE, 2008), Ellison and Ellison (AEJ, 20010), Kreps and
     Wilson (JET, 1982), Milgrom and Roberts (JET, 1982 and EMA 1982), Bolton and
     Scharfstein (AER, 1990), Jacobo-Rubio/Turner/Williams (WP, 2015), Snider (2012),
     Snider and Williams (2015), Lederman (RJE, 2007), Lederman (JEMS, 2008)

- Empirical application (HW #3)– measure impact of operational/marketing barriers on pricing and entry in the airline industry, and evaluation of regulatory/statutory steps taken to abate market power and barriers to competition.

*Price Dispersion and Discrimination:*
- Review of relevant oligopoly models
- Case study on telecom pricing practices – Usage-Based Pricing
- Case study on patent settlements – FTC v. Activis Inc
- Related Academic papers:  Shepard (JPE, 1991), McManus (RJE, 2007), Chevalier/Kashyap/Rossi (AER, 2003), Mortimer (QJE, 2007), Borenstein (RJE, 1991), Borenstein and Rose (JPE, 1994), Gerardi and Shapiro (JPE, 2009), Goldberg JPE, 2009), Leslie (RJE, 2004), Nevo/Wolfram (RJE, 2002), Ayers/Siegelman (AER, 1995), Holmes (AER, 1989), Blackstone (JIE, 1975), Nevo/Turner/Williams (EMA, 2016)
- Empirical application (HW #4) – measuring effectiveness of discriminatory pricing practices for residential broadband services (national ISP data) and international air travel (SIAT data).