

**MECO 6360: TOPICS IN INDUSTRIAL ORGANIZATION
SPRING 2023**

Instructor	Professor Jianqing Chen JSOM 3.808, (972) 883-2458 Office Hours: Thursday 2:15 pm - 3:30pm or by appointment <i>Please use eLearning for emailing the instructor and the TA</i>
TA	Shuzhang Cai JSOM 14.315 Office Hours: Friday 3:00 pm - 5:00 pm or by appointment
Textbooks	(1) (Recommended) <i>The Theory of Industrial Organization</i> , by Jean Tirole, 1988, MIT Press, Cambridge (2) <i>Oligopoly Pricing</i> , by Xavier Vives, 1999, MIT Press, Cambridge (3) <i>Advanced Industrial Economics</i> , by Stephen Martin, 2002, Blackwell Publishers, Oxford
Additional Reading	In addition to the textbooks, a number of journal articles (and handbook articles) are assigned each week. Most of these articles can be downloaded from UTD library. The articles that are unavailable at library will be emailed by the professor or posted on eLearning.
Course Description	<p>This course provides an introduction to Industrial Organization for graduate students in economics and management science. The course and the readings apply concepts from price theory and game theory to explain industry structure, conduct, and performance. Among the topics we will study are the determinants of market structure, strategic interactions between firms, the effects of structure and conduct on prices, non-price dimensions of market performance, vertical control, matching markets, two-sided markets, auctions, and contests and tournaments. The emphasis is on general theoretical principles.</p> <p>The class is divided into a Core section and a Topics section. The Core section introduces students to basic concepts and techniques for modeling firms' interaction and strategies in various competitive and informational environments. The focus of this section is on the underlying modeling issues and solution strategies and not on specific applications or problems. The Topics section covers a number of (recent) developments in the literature on the theory of industrial organization and applied microeconomics.</p> <p>Students are expected to have a firm background in microeconomics (MECO 6345 or ECON 6301) working knowledge of game theory at an introductory graduate course level (OPRE 6311 or ECON 7303). We will use basic game theoretic concepts (static and dynamic games with complete and incomplete information, repeated games) throughout the course. I recommend students refresh their game theory knowledge by consulting their favorite advanced game theory textbook.</p>

Grading Policy

Grades will be based on two exams (30% each) and a number of problem sets (40%). *Submissions after the deadline will not be accepted*, and accordingly a grade of zero will be automatically applied for a missing submission after the deadline. Both exams are *closed-book, closed-notes* and require *individual-effort*. Unless under extreme circumstances, make-up exams will *not* be arranged.

As the grading of any exam or assignment is open to human error, please feel free to question your results. Students have seven calendar days (7) from the posting of results to appeal an assignment or exam grade.

Grade Scale: A, B, C, F

Tentative Schedule

* *Topics and timelines are subject to change at the discretion of the professor*

* *Due time is right before the corresponding class for your section*

<u>Week</u>	<u>Date</u>	<u>Topic(s)</u>
01	1/19	Course Introduction
02	1/26	Monopoly Pricing (I)
03	2/2	Monopoly Pricing (II)
04	2/9	Price Discrimination (I)
05	2/16	Price Discrimination (II)
06	2/23	Oligopoly (I)
07	3/2	Oligopoly (II)
08	3/9	Exam 1
	3/16	Spring Break: No Class
09	3/23	Vertical Control; Horizontal and Vertical Integration
10	3/30	Product Differentiation (I)
11	4/6	Product Differentiation (II)
12	4/13	Barriers to Entry, Limit Pricing, Predatory Pricing
13	4/20	Bundling; Search and Price Dispersion
14	4/27	Auctions; Two-Sided Markets and Platform Competition
15	5/4	Exam 2

Reading List:**January 26 and February 2: Monopoly Pricing**

- * Tirole, chapter 1, pp. 65-94.
- * Gul, F., H. Sonnenschein, and R. Wilson (1986): "Foundations of Dynamic Monopoly and the Coase Conjecture," *Journal of Economic Theory*, 39, 155-190.

Further readings:

- Vives, chapter 3.
- Fudenberg, D. and J. Tirole (1998): "Upgrades, Trade-ins, and Buybacks," *RAND Journal of Economics*, 29(2), 235-258.
- Chevalier, J. and Austan Goolsbee (2009): "Are Durable Goods Consumers Forward-Looking? Evidence from College Textbooks," *Quarterly Journal of Economics*, 124(4), 1853-1884. [empirical]

February 9 and February 16: Price Discrimination

- * Tirole, chapter 3, pp. 133-168.
- * Schmalensee, R. (1981): "Output and Welfare Implications of Monopolistic Third-Degree Price Discrimination," *American Economic Review*, 71(1), 242-247.
- * McAfee, R.P., J. McMillan, and M. Whinston (1989): "Multiproduct Monopoly, Commodity Bundling, and Correlation of Values," *Quarterly Journal of Economics*, 104(2), 371-383.
- * Deneckere, R. and R.P. McAfee (1996): "Damaged Goods," *Journal of Economics and Management Strategy*, 5(2), 149-174.
- * Yoshida, Y. (2000): "Third-Degree Price Discrimination in Input Markets: Output and Welfare," *American Economic Review*, 90(1), 240-246.

Further readings:

- Maskin, E. and J. Riley (1984): "Monopoly with Incomplete Information," *RAND Journal of Economics*, 15(2), 171-196.
- Shepard, A. (1991): "Price Discrimination and Retail Configuration," *Journal of Political Economy*, 99(1), 30-53. [empirical]
- Borenstein, S. and N. Rose (1994): "Competition and Price Dispersion in the U.S. Airline Industry," *Journal of Political Economy*, 102(4), 653-683. [empirical]
- Sibley, D. and P. Srinagesh (1997): "Multiproduct Nonlinear Pricing with Multiple Taste Characteristics," *RAND Journal of Economics*, 28(4), 684-707.
- Corts, K. (1998): "Third-Degree Price Discrimination in Oligopoly: All-Out Competition and Strategic Commitment," *RAND Journal of Economics*, 29(2), 306-323.
- Armstrong, M. (2007): "Recent Developments in the Economics of Price Discrimination," chapter 4 in R. Blundell, W. Newey, and T. Persson, eds., *Advances in Economics and Econometrics, Theory and Applications, Ninth World Congress*, Vol. 2, Cambridge University Press, Cambridge.
- Stole, L. (2007): "Price Discrimination and Competition," chapter 35 in M. Armstrong and R. Porter, eds., *Handbook of Industrial Organization*, Vol. 3, North Holland, New York.
- Aguirre, I., S. Cowan, and J. Vickers (2010): "Monopoly Price Discrimination and Demand Curvature," *American Economic Review*, 100(4), 1601-1615.

February 23 and March 2: Static Competition/Oligopoly Theory

- * Tirole, chapter 5 (incl. Introduction), pp. 205-238.
- * Vives, chapters 1, 5, 7, 8.1 and 8.2.
- * Kreps, D. and J. Scheinkman (1983): "Quantity Precommitment and Bertrand Competition Yield Cournot Outcomes," *Bell Journal of Economics*, 14(2), 326-337.

Further readings:

- Bulow, J., J. Geanakoplos, and P. Klemperer (1985): "Multimarket Oligopoly: Strategic Substitutes and Complements," *Journal of Political Economy*, 93(3), 488-511.
- Klemperer P. and M. Meyer (1989): "Supply Function Equilibria in Oligopoly under Uncertainty," *Econometrica*, 57(6), 1243-1277.
- Martin, S. (2002): "*Advanced Industrial Economics*," Blackwell Publishers, Oxford. Chapters 2 and 3 (Foundations of Oligopoly Theory I and II)

March 23: Vertical Control

- * Tirole, chapter 4, pp. 169-203.
- * Mathewson, G. and R. Winter (1984): "An Economic Theory of Vertical Restraints," *RAND Journal of Economics*, 15(1), 27-38.
- * Rey, P. and J. Tirole (1986): "The Logic of Vertical Restraints," *American Economic Review*, 76(5), 921-939.

March 30 and April 6: Product Differentiation

- * Tirole, chapter 7, pp. 277-303.
- * Dixit, A. and J. Stiglitz (1977): "Monopolistic Competition and Optimum Product Diversity," *American Economic Review*, 67(3), 297-308.
- * Mussa, M. and S. Rosen (1978): "Monopoly and Product Quality," *Journal of Economic Theory*, 37(3), 1067-1082.
- * Singh, N. and X. Vives (1984): "Price and Quantity Competition in a Differentiated Duopoly," *RAND Journal of Economics*, 15(4), 546-554.

Further readings:

- Vives, chapter 6.
- Martin, chapters 3.6-3.8, 4.
- Shaked, A. and J. Sutton (1982): "Relaxing Price Competition through Product Differentiation," *Review of Economic Studies*, 49(1), 3-13.
- Eaton, C. and R. Lipsey (1989): "Product Differentiation," chapter 12 in R. Schmalensee and R. Willig, eds., *Handbook of Industrial Organization*, Vol. 1., North Holland, New York.

April 13: Barriers to Entry, Limit Pricing, Predation

- * Tirole, chapter 8, pp. 305-359; 9.4-9.9, pp. 367-388.
- * Aghion, P. and P. Bolton (1987): "Contracts as a Barrier to Entry," *American Economic Review*, 77(3), 388-401.
- * Nalebu, B. (2004): "Bundling as an Entry Barrier," *Quarterly Journal of Economics*, 119(1), 159-187.
- * Milgrom, P. and J. Roberts (1982): "Limit Pricing and Entry under Incomplete Information: An Equilibrium Analysis," *Econometrica*, 50(2), 443-459.

Further readings:

- Martin, chapters 8.2-8.4.
- Dunne, T., M. Roberts, and L. Samuelson (1988): "Patterns of Firm Entry and Exit in U.S. Manufacturing Industries," 19(4), 495-515. [empirical]
- Bresnahan, T. and P. Reiss (1991): "Entry and Competition in Concentrated Markets," *Journal of Political Economy*, 99(5), 977-1009. [empirical]
- Golder, P. and G. Tellis (1993): "Pioneer Advantage: Marketing Logic or Marketing Legend?" *Journal of Marketing Research*, 30(2), 158-170. [empirical]
- Berry, S. and J. Waldfogel (1999): "Free Entry and Social Inefficiency in Radio Broadcasting," *RAND Journal of Economics*, 30(3), 397-420. [empirical]

Ordover, J. and G. Saloner (1989): "Predation, Monopolization, and Antitrust," chapter 9.3 in R. Schmalensee and R. Willig, eds., *Handbook of Industrial Organization*, Vol. 1., North Holland, New York.

April 20: Search and Price Dispersion

- * Diamond, P. (1971): "A Model of Price Adjustment," *Journal of Economic Theory*, 3(2), 156-168.
- * Salop, S. and J. Stiglitz (1977): "Bargains and Ripoffs: A Model of Monopolistically Competitive Price Dispersion," *Review of Economic Studies*, 44(3), 493-510.
- * Varian, H. (1980): "A Model of Sales," *American Economic Review*, 70(4), 651-659.
- * Stahl, D. (1989): "Oligopolistic Pricing with Sequential Consumer Search," *American Economic Review*, 79(4), 700-712.

Further readings:

- Wolinsky, A. (1984): "Product Differentiation with Imperfect Information," *Review of Economic Studies*, 51(1), 53-61.
- McMillan, J. and M. Rothschild (1994): "Search," chapter 27 in R. Aumann and S. Hart, eds., *Handbook of Game Theory with Economic Applications*, Vol. 2, North Holland, New York.
- Stahl, D. (1996): "Oligopolistic Pricing with Heterogeneous Consumer Search," *International Journal of Industrial Organization*, 14(2), 243-268.
- Sorensen, A. (2000): "Equilibrium Price Dispersion in Retail Markets for Prescription Drugs," *Journal of Political Economy*, 108(4), 833-850. [empirical]
- Ellison, G. and S. Ellison (2009): "Search, Obfuscation, and Price Elasticities on the Internet," *Econometrica*, 77(2), 427-452. [empirical]

April 27: Auction; Two-Sided Markets and Platform Competition

- * Riley, J. and W. Samuelson (1981): "Optimal Auctions," *The American Economic Review*, 71(3), 381-392.
- * Rochet, J.-C. and J. Tirole (2003): "Platform Competition in Two-Sided Markets," *Journal of the European Economic Association*, 1(4), 990-1029.
- * Rochet, J.-C. and J. Tirole (2006): "Two-Sided Markets: A Progress Report," *RAND Journal of Economics*, 37(3), 645-667.
- * Armstrong, M. (2006): "Competition in Two-Sided Markets," *RAND Journal of Economics*, 37(3), 668-691.

Class Materials

The Instructor may provide class materials that will be made available to all students registered for this class as they are intended to supplement the classroom experience. These materials may be downloaded during the course, however, these materials are for registered students' use only. Classroom materials may not be reproduced or shared with those not in class, or uploaded to other online environments except to implement an approved Office of Student AccessAbility accommodation. Failure to comply with these University requirements is a violation of the [Student Code of Conduct](#).

Technical Support

If you experience any problems with your UTD account you may send an email to: assist@utdallas.edu or call the UTD Computer Helpdesk at 972-883-2911.

Field Trip Policies, Off-campus Instruction and Course Activities

Off-campus, out-of-state, and foreign instruction and activities are subject to state law and University policies and procedures regarding travel and risk-related activities. Information regarding these rules and regulations may be found at the website address http://www.utdallas.edu/BusinessAffairs/Travel_Risk_Activities.htm. Additional information is available from the office of the school dean. Below is a description of any travel and/or risk-related activity associated with this course.

Student Conduct & Discipline

The University of Texas System and The University of Texas at Dallas have rules and regulations for the orderly and efficient conduct of their business. It is the responsibility of each student and each student organization to be knowledgeable about the rules and regulations which govern student conduct and activities. General information on student conduct and discipline is contained in the UTD printed publication, *A to Z Guide*, which is provided to all registered students each academic year.

The University of Texas at Dallas administers student discipline within the procedures of recognized and established due process. Procedures are defined and described in the *Rules and Regulations, Series 50000, Board of Regents, The University of Texas System*, and in Title V, Rules on Student Services and Activities of the university's *Handbook of Operating Procedures*. Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations (SU 1.602, 972/883-6391) and online at <http://www.utdallas.edu/judicialaffairs/UTDJudicialAffairs-HOPV.html>

A student at the university neither loses the rights nor escapes the responsibilities of citizenship. He or she is expected to obey federal, state, and local laws as well as the Regents' Rules, university regulations, and administrative rules. Students are subject to discipline for violating the standards of conduct whether such conduct takes place on or off campus, or whether civil or criminal penalties are also imposed for such conduct.

Academic Integrity

The faculty expects from its students a high level of responsibility and academic honesty. Because the value of an academic degree depends upon the absolute integrity of the work done by the student for that degree, it is imperative that a student demonstrate a high standard of individual honor in his or her scholastic work. Students are expected to follow the Student Code of Conduct – UTDSP5003. The contents of the Student Code of Conduct can be found at: <http://policy.utdallas.edu/utdsp5003>.

Any student who commits an act of scholastic dishonesty is subject to discipline. Scholastic dishonesty includes but is not limited to cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts. More examples of scholastic dishonesty are listed at Judicial Affairs webpage at:

<http://www.utdallas.edu/judicialaffairs/UTDJudicialAffairs-Basicexamples.html>

Plagiarism, especially from the web, from portions of papers for other classes, and from any other source is unacceptable and will be dealt with under the university's policy on plagiarism (see general catalog for details). This course will use the resources of turnitin.com, which searches the web for possible plagiarism and is over 90% effective.

Students in this course suspected of scholastic dishonesty are subject to disciplinary proceedings, and if found responsible, will be subject to sanctions that include severe reduction in course grades or a final grade of F for the course.

Copyright Notice

The copyright law of the United States (Title 17, United States Code) governs the making of photocopies or other reproductions of copyrighted materials, including music and software. Copying, displaying, reproducing, or distributing copyrighted works may infringe the copyright owner's rights and such infringement is subject to appropriate disciplinary action as well as criminal penalties provided by federal law. Usage of such material is only appropriate when that usage constitutes "fair use" under the Copyright Act. As a UT Dallas student, you are required to follow the institution's copyright policy (Policy Memorandum 84-I.3-46). For more information about the fair use exemption, see <http://www.utsystem.edu/ogc/intellectualproperty/copypol2.htm>

Email Use

The University of Texas at Dallas recognizes the value and efficiency of communication between faculty/staff and students through electronic mail. At the same time, email raises some issues concerning security and the identity of each individual in an email exchange. The university encourages all official student email correspondence be sent only to a student's U.T. Dallas email address and that faculty and staff consider email from students official only if it originates from a UTD student account. This allows the university to maintain a high degree of confidence in the identity of all individual corresponding and the security of the transmitted information. UTD furnishes each student with a free email account that is to be used in all communication with university personnel. The Department of Information Resources at U.T. Dallas provides a method for students to have their U.T. Dallas mail forwarded to other accounts.

Withdrawal from Class

The administration of this institution has set deadlines for withdrawal of any college-level courses. These dates and times are published in that semester's course catalog. Administration procedures must be followed. It is the student's responsibility to handle withdrawal requirements from any class. In other words, I cannot drop or withdraw any student. You must do the proper paperwork to ensure that you will not receive a final grade of "F" in a course if you choose not to attend the class once you are enrolled.

Student Grievance Procedures

Procedures for student grievances are found in Title V, Rules on Student Services and Activities, of the university's *Handbook of Operating Procedures*.

In attempting to resolve any student grievance regarding grades, evaluations, or other fulfillments of academic responsibility, it is the obligation of the student first to make a serious effort to resolve the matter with the instructor, supervisor, administrator, or committee with whom the grievance originates (hereafter called "the respondent"). Individual faculty members retain primary responsibility for assigning grades and evaluations. If the matter cannot be resolved at that level, the grievance must be submitted in writing to the respondent with a copy of the respondent's School Dean. If the matter is not resolved by the written response provided by the respondent, the student may submit a written appeal to the School Dean. If the grievance is not resolved by the School Dean's decision, the student may make a written appeal to the Dean of Graduate or Undergraduate Education, and the dean will appoint and convene an Academic Appeals Panel. The decision of the Academic Appeals Panel is final. The results of the academic appeals process will be distributed to all involved parties.

Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations.

Incomplete Grade Policy

As per university policy, incomplete grades will be granted only for work unavoidably missed at the semester's end and only if 70% of the course work has been completed. An incomplete grade must be resolved within eight (8) weeks from the first day of the subsequent long semester. If the required work to complete the course and to remove the incomplete grade is not submitted by the specified deadline, the incomplete grade is changed automatically to a grade of **F**.

Disability Services

The goal of Disability Services is to provide students with disabilities educational opportunities equal to those of their non-disabled peers. Disability Services is located in room 1.610 in the Student Union. Office hours are Monday and Thursday, 8:30 a.m. to 6:30 p.m.; Tuesday and Wednesday, 8:30 a.m. to 7:30 p.m.; and Friday, 8:30 a.m. to 5:30 p.m.

The contact information for the Office of Disability Services is:

The University of Texas at Dallas, SU 22

PO Box 830688

Richardson, Texas 75083-0688

(972) 883-2098 (voice or TTY)

disabilityservice@utdallas.edu

If you anticipate issues related to the format or requirements of this course, please meet with the Coordinator of Disability Services. The Coordinator is available to discuss ways to ensure your full participation in the course. If you determine that formal, disability-related accommodations are necessary, it is very important that you be registered with Disability Services to notify them of your eligibility for reasonable accommodations. Disability Services can then plan how best to coordinate your accommodations.

It is the student's responsibility to notify his or her professors of the need for such an accommodation. Disability Services provides students with letters to present to faculty members to verify that the student has a disability and needs accommodations. Individuals requiring special accommodation should contact the professor after class or during office hours.

Religious Holy Days

The University of Texas at Dallas will excuse a student from class or other required activities for the travel to and observance of a religious holy day for a religion whose places of worship are exempt from property tax under Section 11.20, Tax Code, Texas Code Annotated.

The student is encouraged to notify the instructor or activity sponsor as soon as possible regarding the absence, preferably in advance of the assignment. The student, so excused, will be allowed to take the exam or complete the assignment within a reasonable time after the absence: a period equal to the length of the absence, up to a maximum of one week. A student who notifies the instructor and completes any missed exam or assignment may not be penalized for the absence. A student who fails to complete the exam or assignment within the prescribed period may receive a failing grade for that exam or assignment.

If a student or an instructor disagrees about the nature of the absence [i.e., for the purpose of observing a religious holy day] or if there is similar disagreement about whether the student has been given a reasonable time to complete any missed assignments or examinations, either the student or the instructor may request a ruling from the chief executive officer of the institution, or his or her designee. The chief executive officer or designee must take into account the legislative intent of TEC 51.911(b), and the student and instructor will abide by the decision of the chief executive officer or designee.

The information contained in the following link constitutes the University's policies and procedures segment of course syllabi: <https://go.utdallas.edu/syllabus-policies>.

Descriptions and timelines in this syllabus are subject to change at the discretion of the professor.