**Instructor:** Felix Munoz-Garcia

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**Office number:** Hulbert Hall 107A.

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**Office hours:** Wednesdays, 9:00-10:00a.m., and by appointment.

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**Course Rationale**

Theory of market structure and firm behavior, including price and non-price competition, strategic behavior under complete and incomplete information environments, and technological change. (Cross-listed course offered as EconS 594 and FIN 594.)

**Course Objectives and Learning Outcomes**

Provide a graduate-level introduction to industrial organization. It is designed to offer a broad introduction to topics. It will start the process of preparing PhD students to conduct dissertation research in the area. The course presumes that students are familiar with microeconomic theory, game theory, and some econometrics.

**Prerequisites:**
EconS 501, EconS 503, and EconS 511.

**Required Textbooks:**

**Recommended readings in industrial organization:**
Other recommended readings for specific topics:

- Econometric Models for Industrial Organization, Matthew Shum, World Scientific Lecture Notes in Economics.

At the undergraduate level, I strongly recommend Introduction to Industrial Organization, Luis Cabral, The MIT Press, 2017 (second edition), or Industrial Organization, Theory and Applications, by Öz Shy, The MIT Press. They can help clarify some topics before reading them with a more formal approach in the above graduate-level books.

Lectures:
Lectures will be online, via Zoom. Attendance is very important to your success in this class.

Class materials:
All class materials (handouts, additional readings, homework assignments, answer keys, etc.) will be posted on the website: https://felixmunozgarcia.com/econs-594/.

Grading:
Your grade for the course will be based on:

- Problem sets (25%),
- One midterm (25%, Thursday, October 17th), and
- Research paper (5% for the first draft, 25% for the final draft, 10% for its presentation).
- Presentation of a published article (10%).

Important dates:
Midterm: Thursday, October 15th, take-home exam.
Presentations of published articles: Start on October 20th (tentatively), more information TBA.
Research proposal:
1. First draft: Thursday, October 10th. Maximum 5 pages.

Make-up exams will only be given if you have a note from a doctor indicating that you were unable to take the exam at the scheduled time.
Grading scale:

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<tr>
<td>A</td>
<td>88-100</td>
<td>C</td>
<td>55-59</td>
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<td>A-</td>
<td>80-87</td>
<td>C-</td>
<td>50-54</td>
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<td>B+</td>
<td>74-79</td>
<td>D+</td>
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<td>B</td>
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<td>C+</td>
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Note: Grades will not be curved.

Attendance and Participation:

Students are expected to attend all scheduled class times, as attendance and participation contribute significantly to learning in this course. If you feel you miss a class, it is your responsibility to find out from an informed student what occurred in class, what assignments may have been given, etc. Assignments are due at the beginning of class (as described below). Late work is subject to significant grade reduction, depending upon the assignment.

Students with Disabilities:

Reasonable accommodations are available for students with a documented disability. If you have a disability and may need accommodations to fully participate in this class, please visit the Disability Resource Center at http://www.drc.wsu.edu/, stop by their office at the Admin Annex Building, Room 205; or call 509-335-3417. All accommodations must be approved through the Disability Resource Center.

Academic Integrity:

Academic integrity will be strongly enforced in this course. Any student caught cheating on any assignment will be given an F grade for the course and will be reported to the Office Student Standards and Accountability. Cheating is defined in the Standards for Student Conduct WAC 504-26-010 (3). It is strongly suggested that you read and understand these definitions: http://conduct.wsu.edu/default.asp?PageID=338.

WSU Safety:

WSU is committed to maintaining a safe environment for its faculty, staff, and students. Safety is the responsibility of every member of the campus community and individuals should know the appropriate actions to take when an emergency arises. In support of our commitment to the safety of the campus community the University has developed a Campus Safety Plan, http://safetyplan.wsu.edu. It is highly recommended that you visit this web site as well as the University emergency management web site at http://oem.wsu.edu/emergencies to become familiar with the information provided.

TENTATIVE SCHEDULE

1. **Static oligopoly models – Price competition**
   a. Price competition with homogeneous goods and symmetric costs (Section 8.2 in FMG).
   b. Price competition with homogeneous goods and asymmetric costs (top of page 47 in BP).
   c. Price competition with homogeneous goods and cost uncertainty (Section 3.1.2 in BP).
   d. Price competition with heterogeneous goods (exogenous product differentiation), Section 8.4.1 in FMG and 3.1.3 to 3.1.4 in BP.

2. **Static oligopoly models – Quantity competition**
   a. Quantity competition with homogeneous goods and symmetric costs (Section 8.3 in FMG).
   b. Quantity competition with homogeneous goods and asymmetric costs (Exercises 5.6 and 5.7 in my Springer’s book).
   c. Quantity competition with heterogeneous goods (exogenous product differentiation), Section 8.4.2 in FMG.

3. **More topics on static oligopoly models**
a. Reconciling Cournot and Bertrand using capacity constraints, Section 8.6 in FMG.
b. Choosing between different models, Section 3.3.3 in BP.

4. **Dynamic oligopoly models**
   a. Stackelberg model with quantity competition, Section 8.5 in FMG.
   b. Stackelberg model with price competition, Pages 78-79 in BP.
   c. Commitment issues, Section 4.1.3 in BP.

5. **Endogenous entry**
   a. With quantity competition after entry, Section 8.7 in FMG.
   b. With price competition after entry, Section 4.2.3 in BP.
   c. With monopolistic competition after entry, Section 4.2.4 in BP (optional).
   d. For a nice literature review of points 1-5 above, see “Theories of Oligopoly Behavior” by Carl Shapiro, Handbook of Industrial Organization, volume 1, chapter 6.

6. **Endogenous product differentiation**
   a. Motivation, pages 107-113 in BP.
   b. Horizontal product differentiation, Section 5.2 in BP.
   c. Vertical product differentiation, Section 5.3 in BP.
   d. Empirical analysis of product differentiation, Section 5.4 in BP (optional).

7. **Advertising**
   a. Motivation, Section 6.1 in BP.
   b. Advertising in monopoly, equilibrium analysis, Section 6.2 in BP.
   c. Advertising in monopoly, welfare analysis, Section 6.3 in BP.
   d. Advertising in oligopolies, Section 6.4 in BP.
   e. For a literature review on advertising, see “The Economic Analysis of Advertising” by Kyle Bagwell, Handbook of Industrial Organization, volume 1, chapter 28.

**ARTICLES TO PRESENT IN CLASS**

Each student must choose two choose two articles from the same topic in the following list to present in class. You can also suggest a different article you may be interested in reading and presenting that is not in the list. Please contact me as soon as possible via email with the two papers you would like to present. They will be assigned on a first-come first-serve basis.

Before reading the two articles, I strongly recommend you read about the topic in Belleflamme and Peitz’s book, and then in the corresponding chapter of the Handbook of Industrial Organization (Elsevier) as they provide a readable introduction to the topic and a nice literature review, respectively.

1. **Signaling and limit pricing:**

2. **Other signaling topics:**

3. **Advertising:**

4. **Product differentiation, price and non-price competition:**


5. **Price discrimination:**

6. **Vertical control and the theory of the firm:**

7. **R&D, technology diffusion and patents:**

8. **Signaling and environmental certification:**


9. Antitrust:

Book chapters about antitrust that can help you before reading the above articles:

10. Other topics: