



KELLOGG

MECN 441

DEPARTMENT OF MANAGERIAL ECONOMICS AND DECISION SCIENCES
KELLOGG SCHOOL OF MANAGEMENT, NORTHWESTERN UNIVERSITY

COURSE SYLLABUS

The Economics of Competition

Winter 2005

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What is this course about?

MEC 441 is about *the economics of competition*. In this course, we use microeconomic theory to study how competition unfolds in a variety of market settings and how, in light of that, competition might be strategically managed. The theory that we study builds on the theory that you learned in your MECN 430 course.

In particular, the course introduces the following major strategic issues, with corresponding cases and frameworks to illustrate and solve the problems they raise:

- **Product positioning:** We will use *the location model of product differentiation* to examine competitive strategy issues centered around product positioning decisions. The leading example is *Gillette's positioning of the excel sensor*. We will also use this framework to examine strategies like *fighting brands, competitive convergence, couponing and rebates, loyalty programs, price protection policies*, among others.
- **Short-term price competition.** The leading cases are *American Airlines Value Pricing* and *GE vs. Westinghouse*. The latter documents 10+ years of destructive price dynamics in an industry where just two firms have a virtually complete lock on a highly lucrative market. We develop sets of tools and frameworks to help us understand destructive short-run price competition and price wars, including reaction functions, spatial models of product differentiation, and short- vs. long-term incentives.
- **Irrationality and competitive strategy.** Economists only recently discovered that human decision makers are irrational! This recent, and ongoing, paradigm shift has already had profound impact on Economics Finance, but its effect on strategy has been lagging. We will examine strategic issues that arise due to irrational behavior. Specifically, I will cover herd behavior, the sunk cost fallacy, share-building strategies, and self control problems.

- **The durability of competitive advantage.** We study two short cases on *Motorola* and the *PBX market*. The main framework is the idea of judo strategy, a strategy by which the dominant position of a large powerful incumbent can be effectively challenged by a weaker, but focused and nimble challenger.

Important Dates and Deadlines

	<i>Section 71 (Tuesdays; Chicago)</i>	<i>Section 81 (Evanston evening)</i>
<i>In-class Midterm</i>	<i>Feb. 8</i>	<i>Feb. 9</i>
<i>Term paper due</i>	<i>March 8</i>	<i>March 9</i>
<i>In-Class final</i>	<i>March 15</i>	<i>March 16</i>

Course Material

The course will use a case packet that can be purchased at the bookstore. The packet includes the cost of 450 pages of material handed out in class.

Attendance and Class Participation

Attendance, preparation, and participation are expected and represent an essential component of the learning experience in this course. Learning opportunities are maximized when a student is actively engaged in the class discussion. Active engagement means that you are listening carefully to the comments of other students and seeking opportunities to make relevant comments. I evaluate class participation based on:

Relevance: Are your comments clearly related to the case and to the comments of others?

Advancement: Does your comment move the class discussion forward?

Fact-based: Have you used specific data from the case, from readings, or from personal experience to support the assertions that you are making?

Logical: Is your reasoning consistent and logical? Do you use concepts from the readings or lectures correctly?

Originality: Do your comments go beyond “boiler plate” answers and bring fresh perspectives to bear on the problems under consideration?

On the whole, what matters is the *quality* of class participation, not the quantity. The dimensions outlined above provide criteria to measure the quality of an answer or a comment.

To increase opportunities for effective participation, I will cold call a student to open the class discussion. If you feel that you are preparing well but that I am not calling on you often enough, please let me know.

Weekly Class Preparation

The course outline classifies the readings in the packet into 5 categories, each requiring a different type of preparation:

Required readings

Class discussion will draw heavily on such readings.

Optional readings

These are readings we *might* refer to in class (usually depending on the time available). Although they provide useful supporting material, they are not essential.

Exercises

Class discussion will draw heavily on these, so you need to thoroughly familiarize yourself with them *before* coming to class. Please go over the exercise and prepare either a written sketch of a solution or an account of the difficulties you encountered (this can be done individually or in teams). Answers to exercises will not be collected or graded.

Homeworks

There are 6 homework problems, 2 to be done individually and 4 to be done in teams.
(Individual and team homeworks are clearly marked in the syllabus.)

Homeworks are to be submitted at the beginning of the class in which they are due. Graded homeworks are typically returned within a week of the day they are collected.

Cases:

You are required to prepare all cases covered in this course. Each case is preceded with a set of discussion questions that should guide you in your preparation.

When no homework or exercise appear in a given session then none is required.

Microeconomics Requirements

To understand the material covered in this course and do well in the exams, it is essential that you be familiar with basic concepts and tools from Microeconomics. The material required is covered in MECN 430 or its equivalents at Kellogg, so *I do not review Microeconomics in this course.*

More specifically, you will need to be thoroughly familiar with:

1. Marginal revenue and marginal cost.
2. Optimal pricing ($MR=MC$).
3. Pricing in “produce to order businesses” (“pricing a service contracts” is how this material may have been covered in MECN 430).
4. Price competition with differentiated products (Bertrand games): Reaction functions, factors that shift reaction functions, Nash equilibrium.
5. Normal form (matrix form) games: Nash equilibrium, dominant and dominated strategies, prisoners’ dilemma.
6. Extensive form (tree form) games.

I do not make use of Cournot equilibrium in this course.

If you did not have the necessary exposure to these concepts (e.g. because you waived out of micro), most of the relevant material is covered in any standard intermediate textbook on the subject (including Prof. Besanko’s textbook, which is the required textbook at Kellogg). The only exception is pricing in “produce to order business.” I will make this material available to you electronically.

Grading

Course score before adjustments:

- | | |
|---------------------------------------|-----|
| 1. A team term paper, | 35% |
| 2. An optional in-class midterm exam, | 20% |
| 3. An in-class final examination, | 35% |
| 4. Homeworks | 10% |

The result is your course score before adjustments.

Optional midterm: For each student I take the *highest* of two scores:

1-The score based on the percentages above; and

2-The score with the same weights for the term paper and homeworks, but where the final counts for 55% and the midterm carries no weight.

This means that if you decide not to take the midterm, or if you take it but you do better in the final exam, only the final exam grade will count. The midterm will count only if it can help you improve your overall position.

Adjustments: The score computed above is then adjusted *up or down* to reflect class participation, attendance, and participation in the collective team efforts.

Team participation adjustment: at the end of the quarter I will circulate an electronic form in which you evaluate the individual contribution of each member of your team to collective team effort. The grade computed according to the percentages above can *move up by at most 5%* or *move down by at most 15%*. Most students make a fair and adequate contribution and so they get no adjustment, positive or negative, indicating adequate contribution to team effort. As a general rule, *adjustments will be made very conservatively, and only when there is a compelling reason to do.*

Class participation adjustment: your grade can *move up or down by a factor of 10%*, reflecting class participation. Please note that it is the quality of participation that counts, not its “quantity.”

Adjusted course score: I will take the score before adjustment and add to it any adjustments as described above to obtain the adjusted course score. Your final letter grade in this course will be based on this adjusted score.

Class Presentation Guidelines

You should focus your presentation on the presentation questions accompanying each case. How you do this is up to you: You choose what to present, the overall format and content, and which information to include.

The only binding requirement is that you should observe the time limit for each presentation.

PROCEDURE FOR REQUIRED PRESENTATIONS:

- About 10-15 minutes before class, I will randomly select a team.
- Teams that presented in the past may be picked again, but with lower probability.
- The presenter should expect to take questions throughout the presentation.
- Plan on a presentation with 4-6 ppt slides.
- You should observe the time limit strictly.
- **Who presents and how:** Each team should coordinate *in advance* on a choice of 1-3 of its members to come up to present. The other team members should clearly identify themselves to the rest of the class and should feel free to interject, answer questions or provide follow ups. I would like the non-presenting team members to remain in their seats.
- **Deliverables:** each team should hand in a hard copy of its slides along with a (stapled) cover sheet indicating the title of the presentation and the names of team members. I will examine these slides after class, but I will not grade them or turn them back to you unless I have specific comments or questions.
- **Technology:**
 - Please do not e-mail me your presentation.
 - You may use your laptop for presentation.
 - Alternatively, you can use my laptop. I will bring a USB flash memory card to transfer the presentation to my laptop.

PROCEDURE FOR OPTIONAL PRESENTATIONS:

- The same as above, except that will ask teams to volunteer by sending me an e-mail before class. If no one volunteers 24 hours before class, I will pick a team at random. Non-presenting teams do not have to submit anything.

Course Outline

Part I: The Competitive Strategy of Product Positioning

WEEK 1

SESSIONS 1&2:

Course introduction;

Product positioning and competitive convergence;

Term Paper: guidelines, topics, and expectations.

Required Readings:

I will use this fun article to motivate the course.

- Roxburgh, C. (2003). "Hidden Flaws in Strategy," McKinsey Quarterly, 3, 27-39.

You will also need to read:

- Besanko, D., "Notes on Product Differentiation and Price Competition in an Oligopoly," Kellogg School of Management.
- Term Paper Guidelines.

Preparation:

- I will go over the mechanics of the location model following the Besanko reading above. You should take a close look at the reading before class since I will go over it fairly quickly. In particular, you need to be familiar with the Microeconomics concepts of MR and MC and their use in pricing decisions since I will not be reviewing them in class.

WEEK 2

SESSION 3:

The RTE cereal business

INDIVIDUAL homework due:

Both problems are to be turned in. *Each problem counts as a separate homework for grading purposes:*

HW 1: Besanko, D., “Positioning the Gillette Sensor” Kellogg School of Management.

HW 2: Al-Najjar, N.I. “Pricing with vertically differentiated products,” Kellogg School of Management.

Exercise:

- Besanko, D.: “Exercise on Product proliferation and preemption,” Kellogg School of Management.

Case:

- “The Ready-to-Eat Breakfast Cereal Industry in 1994 (A),” HBS 9-795-191.

SESSION 4:

Consolidation Strategies: The car retailing business

Optional Case presentation:

- I will ask for teams to volunteer to give a 4-6 slide presentation dealing with the issues raised in the presentation questions for this case. The volunteering team will give a 7-9 minutes presentation followed by 4-5 minutes of class discussion.

Optional readings:

- Yates, R.: “Revolution in car buying,” *Chicago Tribune*, September 16, 1995.

Cases:

- Al-Najjar, N. and N. Pardasani: “The U.S. autoretailing in the mid 1990’s (A).” Kellogg School of Management. The B and C cases will be passed out in class.

Part II: Strategic Management of Short-term Price Competition

WEEK 3

SESSION 5:

American Airlines' Value Pricing Initiative

Required Case presentation:

- Each team should be prepared to give a 4-6 slide presentation dealing with the issues raised in the presentation questions for this case. All teams must submit a hard copy of their presentation. I will pick one team at random to give a 7-9 minutes presentation followed by 4-5 minutes of class discussion. (see the Presentation Guidelines)

Required Readings:

- Hay, G., "Practices that facilitate cooperation: the ethyl case," from *The Antitrust Revolution*, Kwoka, J. and L. White, ed., (Glenview, IL: Scott Foresman), 1989.

Cases:

- American Airlines' Value Pricing (A) (HBS 9-594-001. The B case will be passed out in class).

SESSION 6:

Over-reaction and Judo Economics

Optional Readings:

- Yoffie, D. B. and M. Kwak, *Judo Strategy: Turning Your Competitors' Strengths to Your Advantage*, Chapter 8: "How to Beat a Judo Master: From Judo to Sumo Strategy" (Boston: Harvard Business School Press), 2001.

WEEK 4

SESSION 7:

Short-Term Pricing Dynamics, Reaction Functions, and Nash Equilibrium;

Strategic Evaluation of Marketing Strategies: Coupons and rebates

- This class will be based on a series of spreadsheet-models to be passed out to you shortly before class.
- *Please bring your laptop to class.* If for some reason you are not able to do so (or you forget), then ask another student to share in his/her laptop.
- This is the only session in which the use of laptops in class is allowed.

SESSION 8:

GE vs. Westinghouse in the Large Turbine Generators Market

Required Case presentation:

- Each team should be prepared to give a 4-6 slide presentation dealing with the issues raised in the presentation questions for this case. All teams must submit a hard copy of their presentation. I will pick one team at random to give a 7-9 minutes presentation followed by 4-5 minutes of class discussion.

Cases:

- GE Versus Westinghouse in Large Turbine Generators (A). (HBS 9-380-128). The and A and B cases will be passed out in class.

WEEK 5

SESSION 9:

*GE versus Westinghouse: Conclusion;
Pharmaceutical Contract Bidding; Spatial Signaling*

SESSION 10:

Strategic Evaluation of Marketing Strategies: *Loyalty Programs*

Price Warfare Summary: *Risk factors and Strategies*

TEAM Homework:

HW 3: Besanko, D., "Price Discrimination in an Oligopoly," Kellogg School of Management.

Optional Readings:

- Garda, R. A. and M.V. Marn, "Price Wars," *McKinsey Quarterly* (3, 1993), pp. 87 - 100.
- Rao, A.R., M. Bergen, and S. Davis, "How to Fight a Price War," *Harvard Business Review* (March-April 2000), pp. 107-116.

Exercise:

- Dana, J.: "Exercise for the GM card case," Kellogg School of Management.

Case:

- General Motors Leads the Charge: The Launch of the GM Card (HBS 9-795-123).

WEEK 6

The exam takes place this week in the same classroom during regular class hours of the section you are registered in.

SESSION 11:

Optional In-Class Midterm Exam.

- The meaning of “Optional” is described in details in the Grading section of the Syllabus.
- The mid-term will not be offered at any other time and for any reason other than a documented medical condition. (In particular, no exceptions are made for interviews, business travel, family obligations, and so on).
- The exam will consist of three questions and lasts 90 minutes.
- Following the exam, we will have a 20 minute break and, yes, a one- hour class (session 12 below)!

Part III: Irrationality and Competitive Strategy

SESSIONS 12:

Behavioral Biases and Competitive Strategy:

Herd Behavior

The perfect class after a tough mid-term! The class will center around a card game to be explained in class. All readings for this topic will be supplied in class.

WEEK 7

SESSION 13:

Behavioral Biases and Competitive Strategy:

The Sunk Cost Fallacy, Empire-Building and Share-Building Strategies

TEAM Homework:

Both problems are to be turned in. *Each problem counts as a separate homework for grading purposes:*

HW 4: Al-Najjar, N.I., “Price Competition with a Touch of Irrationality,” Kellogg School of Management, 2001.

HW 5: Al-Najjar, N.I. and D. Besanko (2003). “Price Competition in the Canadian Stick Margarine Market,” Kellogg School of Management.

SESSION 14:

Behavioral Biases and Competitive Strategy:

The US credit card industry

Optional Case presentation:

- I will ask for teams to volunteer to give a 4-6 slide presentation dealing with the issues raised in the presentation questions for this case. The volunteering team will give a 7-9 minutes presentation followed by 4-5 minutes of class discussion.

Case:

- Al-Najjar, N., D. Besanko and R. Uchoa: “*The U.S. credit card industry*,” Kellogg School of Management.

Part IV: Capturing and Maintaining Competitive Advantage

WEEK 8

SESSIONS 15 & 16: *Technological innovation in oligopoly markets*

Optional Reading:

- Bower, J.L. and C.M. Christensen, “Disruptive Technologies: Catching the Wave,” *Harvard Business Review* (January-February 1995), pp. 43-53.

TEAM homework:

HW 6: Baliga, S. and J. Dana: “*Exercise on Innovation in the Pharmaceutical Industry,*” Kellogg School of Management.

Case:

- Al-Najjar, N. and D. Besanko: “The erosion of incumbency advantage in Motorola’s wireless handset business,” Kellogg School of Management, 2002.
- Al-Najjar, N. and D. Besanko: “The erosion of incumbency advantage in the PBX market,” Kellogg School of Management, 2002.

WEEK 9

SESSIONS 17 & 18:

Competing in “Winner-Take-All” Industries: Boeing vs. Airbus in the Very Large Airplane Business

Required Exercise presentation:

- I will pick at least two teams to present their strategy to play the winner-take-all game in the exercise and the reasoning underlying your answer. Each team should be prepared to give a 3-5 slide presentation on a laptop and plan on a 5-7 minutes presentation time including questions.

Exercise:

- Al-Najjar, N.I. and D. Besanko: “Exercise on competition in winner-take-all markets,” Kellogg School of Management.

Case:

- Al-Najjar, N.I.: Boeing vs. Airbus in the Very Large Aircraft Market. Kellogg School of Management.

WEEK 10

SESSIONS 19:

Course Summary and Review: *Price Wars*

The great Hamburger Price war of 2003

SESSIONS 20:

Course Summary and Review: *Capturing and Maintaining Strategic Advantage*

Patent Races in the Orphan Drug Category

WEEK 11

The exam takes place this week in the same classroom during regular class hours of the section you are registered in.

- The final will not be offered at any other time and for any reason other than a documented medical condition. (In particular, no exceptions are made for interviews, business travel, family obligations, GIM trips, and so on).
- The exam will consist of four questions and lasts 120 minutes.