NATIONAL UNIVERSITY OF SINGAPORE
NUS Business School
Department of Marketing

BMA 5509: Seminars In Marketing: Marketing Strategy & Game Theory

LECTURER: Dr. Lim Wei Shi (weishi@nus.edu.sg)
Associate Professor

OFFICE: BIZ1 8-13

SESSION: Special Term II 2011/2012 (18 June 2012 – 28 July 2012)
Monday 1800 - 2130
Friday 1800 - 2130

COURSE OBJECTIVES:

This course adopts a game-theoretic approach to strategic marketing issues. Marketing effort, far from being a homogeneous input, is a combination of the 4 Ps, namely, (1) pricing and price promotions; (2) promotional activities such as advertising, personal selling, and public relations; (3) distribution and channel activities related to the availability of goods and servicing of orders; and (4) product-development and product-improvement activities. In this course, we will study the strategic interactions between the 4 Ps and discuss the latest issues.

PREREQUISITES:

The course is suitable for those with an interest in thinking mathematically. Students do not need to have knowledge of game theory. The basics of game theory will be covered during the course.

REFERENCES

There is no textbook for the application of Game Theory to marketing strategies. Occasionally, we will refer to the following books on Game Theory:

Gibbons, Robert (1992) A Primer in Game Theory, Harvester Wheatsheaf. (HB144Gib)

We may also refer to the following on strategies:

Lilien, Kotler & Moorthy (1992), Marketing Models, Prentice Hall. (HF5415.13Lil)


**ASSESSMENT METHODS**

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<thead>
<tr>
<th>Case Analysis</th>
<th>-</th>
<th>10% + 10% (group)</th>
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<tr>
<td>Class Participation</td>
<td>-</td>
<td>10%</td>
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<tr>
<td>Group Project</td>
<td>-</td>
<td>30%</td>
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<tr>
<td>Quiz</td>
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<td>2 X 20%</td>
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**CASE ANALYSIS (10% + 10%):** Students have to do a case analysis on a group basis. The case analysis constitutes 10% of the total assessment. The deadline of the written report (to be submitted by the group responsible and is restricted to no more than five pages) is the day before the class by 1700 hours. The group will upload it onto the workbin at IVLE. Each group should also prepare to do a presentation on the case that they are responsible for.

Each group is also required to submit questions regarding the case analyses/reports done by other groups latest by the day of class 1500 hours. These questions are also to be uploaded onto the workbin at IVLE. All these questions constitute another 10% of the total assessment.

**CLASS PARTICIPATION (10%):** This course will be taught in a seminar format, with interaction and discussion among the students. Everyone is expected to attend all classes and to participate actively in class. Over the course, I will make a judgment about each student’s level of involvement in class discussions.

**QUIZ (2 X 20%):** Two quizzes (2 hours each) are scheduled on 2 July 2012 and 23 July 2012. They contribute a total of 40% to the total assessment. The quizzes are of the open-book format.

**GROUP PROJECT (30%):** Students participate in groups of two or three to actually model and analyze a game-theoretic situation, and write the results in a collaborative paper. Each group will present its paper at the end of the course. The project will be graded based on the criteria of (1) originality of topic, (2) the analysis, (3) clarity of writing and (4) the presentation of the project. A one-paragraph proposal of the project topic is to be submitted by the end of 9 July 2012 1700 hours. The deadline for the actual project report (of up to 10 pages) is by 25 July 2012 1700 hours.

All submissions must adhere strictly to the deadline. Marks for any submissions made after the deadline will be discounted based on a daily discount rate of 10%.
Below is a detailed description of the course syllabus.

However, expect it to be adjusted now and then depending on the progress of the classes. Some of the cases may change too depending on the availability of more recent cases.

DETAILED COURSE SYLLABUS

Lecture 1 (Introduction to Game Theory)

- Dominant and Dominated Strategies
- Iterated Elimination of Strictly Dominated Strategies
- Nash Equilibrium
- Mixed Strategies

Exercise on static games of complete information

Readings:


Lecture 2 (Market Entry)

- Dynamic/Extensive Form Games
- Backward Induction/dynamic programming

Case 1: The Fog of Business

Readings:


Lecture 3 (First mover Advantage)

- Critiques of Backward Induction

Case 2: Carrefour China: Maintaining its past glory or drowning in the sea of competition?

Readings:

1. Dutta, *Strategies and Games*, Chapter 11 – Extensive Form Games and Backward
Induction, Chapter 13 – Subgame Perfect Equilibrium.

**Lecture 4. (Judo Economics)**

**Case 3: Judo Economics**

**Readings:**


**Lecture 5**

**Quiz 1 (1815 - 2015)**

**Video:** Judo Strategy (David Yoffie, Harvard Business School) 52 minutes

**Lecture 6 (Dynamics Over Time)**

- Why the Cournot and Bertrand Model are not dynamic
- Dynamic Pricing Rivalry: Theory
- The “Folk Theorem”

**Case 4: Product Proliferation & Preemption**

**Readings:**

2. Dutta, *Strategies and Games*, Chapter 14 – Finitely Repeated Games, Chapter 15 – Infinitely Repeated Games

**Lecture 7. (Signaling Games and Akerlof’s Market of Lemons)**

**Case 5: Signaling Costs**

**Readings:**

Lecture 8 (Pricing Revisited – Selling to Buyers With Unknown Valuations) 17 March 2008

Case 6: An R&D Race – The Race to Develop Human Insulin

Readings:

1. Dutta, Strategies and Games, Chapters 22, 23

Lecture 9 (Auction Theory – An Overview)

- Types of auctions
- The winner’s curse
- Bidding strategies
- Vickrey’s Revenue Equivalence Theorem

Case 7: Motorola in China

Readings:

1. Duxit & Skeath, Games of Strategies, Chapter 15

Lecture 10 (Bargaining) 24 March 2008

Case 8: Philips’ Compact Disk Introduction

Readings:


Lecture 11

Quiz 2 (0930 - 1130)

Video: The Stanford Video Guide to Negotiating

Lecture 12 (Presentation of Group Project and Discussion)

27 January 2012
<table>
<thead>
<tr>
<th>No.</th>
<th>Date</th>
<th>Topic</th>
<th>Assignment/Class Activity</th>
<th>Remarks</th>
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<tr>
<td>1</td>
<td>18 June 2012</td>
<td>Introduction to Game Theory</td>
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<td>2</td>
<td>22 June 2012</td>
<td>Market Entry</td>
<td>Case 1: The Fog of Business</td>
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<td>First Mover Advantage or not</td>
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<td>Case 3: Judo Economics</td>
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<td>2 July 2012</td>
<td>Quiz 1</td>
<td>Video 1: Judo Strategy</td>
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<td>Dynamics Over Time</td>
<td>Case 4: Product Proliferation and Preemption</td>
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<td>Signaling Games</td>
<td>Case 5: Signaling Costs</td>
<td>Group 5</td>
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<td>8</td>
<td>13 July 2012</td>
<td>Pricing Revisited – Selling to Buyers with Unknown Valuations</td>
<td>Case 6: An R&amp;D Race</td>
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<td>Case 7: Philips’ Compact Disk Introduction</td>
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<td>Case 8: Motorola in China</td>
<td>Group 8</td>
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<td>12</td>
<td>27 July 2012</td>
<td>Presentation of Group Projects &amp; Discussion</td>
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<td>ALL</td>
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