

## Module Outline

**Module Code** : MKT3513/MKT3812  
**Module Title** : Game Theory & Strategic Analysis  
**Semester** : Semester II, AY2122  
**Faculty** : Assoc Prof Lim Wei Shi  
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### Overview

In this course, we adopt a (behavioural) game-theoretic perspective to explore and understand traditional strategic marketing issues and learn how game theory can be applied these issues.

Throughout the course, we will draw on various pedagogies to facilitate and enhance our learning objectives. These include the use of games, cases, articles from HBR as well as a group project.

The course is suitable for those with an interest in thinking strategically.

### Module Objectives

Upon completion of this course, participants will

- Gain a solid understanding of (behavioural) game theory
- Learn how to apply game theory to analyse strategic issues, particularly related to marketing

**General Guide & Reading** (e.g. Case preparation guide, project report guide, main textbook & supplementary materials, etc)

[D] Dutta, Prajit K. (1999) *Strategies and Games - Theory and Practice*, MIT Press. (HB144Dut)

[DN] Dixit, Avinash and Nalebuff, Barry (1991) *Thinking Strategically*, Norton. (HD30.28Dix)

[DS] Dixit, Avinash and Skeath, Susan (1999) *Games of Strategy*, Norton. (HD144Dix)

[B] Besanko, Dranove & Shanley (2012), *Economics of Strategy*, John Wiley & Sons, Inc. (HB30.28 Eco)

[M] McMillam, J (1992) *Games, Strategies and Managers*, Oxford University Press. (HD30.26Mcm)

[N] Nalebuff & Branderburger (1996), *Co-opetition*, Harper Collins Business.

### Assessment

Assessment Components	Weightage
Class Participation	15%
Mid-term Test	25%
Final Test	30%
Group Project	30%

## **Schedule and Outline**

Introduction to Game Theory

Static Games: Pure and Mixed Strategy

Static Games: Cournot & Bertrand Model

Dynamic Games: Stackelberg model, Subgame Perfect equilibrium

Dynamic Games: Strategic Commitments, complements & substitutes

Repeated Interactions: Pricing Dynamics

Asymmetric Games: Price Discrimination and Screening

Asymmetric Games: Signaling

## **Academic Honesty & Plagiarism**

Academic integrity and honesty is essential for the pursuit and acquisition of knowledge. The University and School expect every student to uphold academic integrity & honesty at all times. Academic dishonesty is any misrepresentation with the intent to deceive, or failure to acknowledge the source, or falsification of information, or inaccuracy of statements, or cheating at examinations/tests, or inappropriate use of resources.

Plagiarism is “the practice of taking someone else’s work or ideas and passing them off as one’s own” (The New Oxford Dictionary of English). The University and School will not condone plagiarism. Students should adopt this rule - You have the obligation to make clear to the assessor which is your own work, and which is the work of others. Otherwise, your assessor is entitled to assume that everything being presented for assessment is being presented as entirely your own work. This is a minimum standard. In case of any doubt, you should consult your instructor.

## **Additional guidance is available at:**

- <http://www.nus.edu.sg/registrar/administrative-policies-procedures/acceptance-record#NUSCodeofStudentConduct>
- <http://nus.edu.sg/osa/resources/code-of-student-conduct>

Week	Topic	Recommended Readings
1	Introduction to Game Theory	[D] Ch. 1 Competitive and Cooperative Dynamics, Harvard Business Publishing. Predicting your competitor's reaction, Harvard Business Review
2	Static Games: Pure & Mixed Strategy	[D] Ch..3, 4, 5, 6, 8 [DS] Ch. 2
3	Static Games: Cournot Model	[B] Ch. 5, 7
4	Static Games: Bertrand Model Dynamic Games: Stackelberg Model, Subgame Perfect Equilibrium	<b>Exercise 1: Static Games of Complete Information (Week 3)</b> <b>Mock Test 1 (Week 3)</b> <b>Submission of Group Formation (Week 3)</b>
5	Test 1 (25%)	Includes everything up to Bertrand Model
6	Dynamic Games: Strategic Commitments, Complements & Substitutes,	[D] Ch. 11, 13 There's only one way to break into China's crowded retail market, Harvard Business Review, August 13, 2018.
	Recess Week	
7	Repeated Interactions: Pricing Dynamics	[D] Ch. 14, 15 [B] Ch. 10
8	Repeated Interactions: Pricing Competition	<b>Exercise 2: Dynamic Games of Complete Information (Week 7)</b> <b>Submission of 5% Project Proposal (Week 8)</b>
9	Asymmetric Games: Price Discrimination and Screening	Price discrimination, Harvard Business School, 9-191-105. [DS] Ch.12 <b>Exercise 3: Dynamic Games of Incomplete Information (Week 9)</b>
10	Asymmetric Games: Signaling	<b>Mock Test 2 (Week 10)</b>
11	Test 2 (30%)	Includes materials from Weeks 6-10
12	Group Presentation Video (20%)	<b>Submission of Presentation Slides on LumiNUS (Week 12)</b>
13	Individual Project Critique (5%)	<b>Submission of 5% Project Critique due (Week 13)</b>