DSC5101 ANALYTICS IN MANAGERIAL ECONOMICS

AY2017-2018 Semester 1

Instructor: Associate Professor Jussi Keppo
Department: Decision Sciences
Office: Mochtar Riady Building, BIZ 1 #8-77
Email: keppo@nus.edu.sg

Summary

We analyze price formation and economic performance in imperfectly competitive markets by using optimization, statistical and stochastic methods. Strategic interactions between the participants in these markets are emphasized and a theoretical framework is laid out.

Theoretical models are analyzed with industry examples and datasets.

Topics

- Monopoly and market power
- Oligopolistic markets
- Empirical analysis
- Optimization and stochastic modeling
- Network industries

Course Material

- Lecture notes

Projects

There are 3 case projects that are done in groups. Each group has 3 - 5 students. The due dates of the case projects: 6 September, 4 October, and 25 October (before the class).

There is also one in-class individual project, which is on 8 November (regular class time). Further, in addition to the projects there are homework assignments.
Prerequisites

No prerequisites for the Master of Science in Business Analytics (MSBA) students. For non-MSBA students basic statistics at the level of DSC4213 Analytical Tools for Consulting.

Assessments

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
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<tbody>
<tr>
<td>In-class project</td>
<td>40%</td>
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<td>Group projects</td>
<td>40%</td>
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<tr>
<td>Homework</td>
<td>20%</td>
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<td>Exceptional participation gives up to 5% to the final grading.</td>
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<td><strong>Total</strong></td>
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Tentative Schedule

Lectures 1-4:
- Introduction
- Monopoly and market power, empirical analysis
- Oligopolistic markets

Lectures 5-8:
- Monopoly market
- Price optimization, price discrimination, complementary good pricing, durable good pricing, bundling

Lectures 9-11:
- Oligopoly market
- Introduction to game theory, Bertrand competition, Cournot competition
- Price optimization, market entry, capacity expansion

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