

## **DSC5101    ANALYTICS IN MANAGERIAL ECONOMICS**

AY2017-2018 Semester 1

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### **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
- Lynne Pepall, Dan Richards and George Norman: Industrial Organization: Contemporary Theory and Empirical Applications, 5th Edition, Wiley

### **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

Component	Weight
In-class project	40%
Group projects	40%
Homework	20%
Exceptional participation gives up to 5% to the final grading.	
<b>Total</b>	<b>100%</b>

### 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

### Academic Honesty and 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.

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