

STRATEGIC BEHAVIOUR IN BUSINESS AND ECONOMICS

Number of sessions: 30

Length of each session: 1,5 h

Total length of the module: 45 hours

INTRODUCTION TO THE COURSE

This course is designed as a brief introduction to individual decision making. Its main objective is to provide the students with decision theory and game theory tools that can be useful not only in business environments but also in everyday life.

We begin with an experiment including several basic decision problems and games. The second and the third part of the course are the core of the subject where the student actually learns how to solve and analyse decision problems and games. Once the basic theory is learned, we proceed to some critiques and alternative approaches.

REQUIREMENTS

- Basic Knowledge of Micro Economics and Mathematics

CONTENTS

1. Introduction

- 1.1 Problems we solve every day: What are we going to do?
- 1.2 The experiment (Note: Not an exam)

2. Individual decision making

- 2.1 Basic concepts: Values, preferences, and utility
- 2.2 Choice under uncertainty: Lotteries and risk aversion
- 2.3 Value of information: Decision trees and backward induction

3. Game Theory

- 3.1. What is a Game?
 - 3.1.1 The elements of a Game
 - 3.1.2 The Rules of the Game: Example
 - 3.1.3 Examples of Game Situations
 - 3.1.3 Types of Games
- 3.2 Solution Concepts
 - 3.2.1 Static Games of complete information: *Dominant Strategies, Dominated Strategies, and Nash Equilibrium in pure and mixed Strategies*

3.2.2 Dynamic Games of complete information: *Nash Equilibrium, Backward Induction* and *Subgame Perfection*

4. The Theories and the Real World

4.1 Applications: Auctions and Negotiation

4.2 What the theory does not reflect? (Back to The experiment)

5. Alternative approaches

5.1 Psychology

5.2 Evolution

5.3 Artificial intelligence

GRADING

Problem Sets (45%): Up to four *Problem Sets* will be distributed during the course, collected one week later, graded, and returned back.

Strategic Memo (20%): A *Strategic Memo*, that will consist of the analysis of one real-world-case using the tools learned in class, will be written in teams (of up to 5 members) and submitted. In-class presentations will take place during the last week of the course. (Length: 2 pages including figures).

Final Exam (35%): A *Final Exam* consisting of questions and exercises on the topics covered in class.

BIBLIOGRAPHY

Dixit.A.K and B. J. Nalebuff (1991) *Thinking Strategically: The Competitive Edge in Business, Politics and Everyday Life*. W.W. Norton & Company. New York

Gibbons R. (1992) *A primer in game theory*. Pearson Higher Education

Roy Gardner (1995) *Games for Business and Economics*. New York: Wiley