

## MANAGERIAL ECONOMICS

<b>Course code</b>	<i>ECO107</i>
<b>Compulsory in the programmes</b>	<i>Economics and Data Analytics, Economics and Politics</i>
<b>Level of studies</b>	<i>Undergraduate</i>
<b>Number of credits and</b>	<i>6 ECTS (48 contact hours + 6 consultation hours + 2 hours of examination, 106 individual work hours)</i>
<b>Course coordinator (title and name)</b>	<i>Assist. Prof. Dr. Simonas Čepėnas</i>
<b>Prerequisites</b>	<i>Microeconomics</i>
<b>Language of instruction</b>	<i>English</i>

### THE AIM OF THE COURSE:

Managerial economics is an intermediate microeconomics course for bachelor students in a business school. The course recaps and dives deeper into the principles of the Markets and Consumer theory, but primarily focuses on the theory of the firm. Through this course, students will use economic modeling, decision theory and game theory to get deeper insights into these topics. By the end of the course, students will have familiarity with (1) static games of complete information, (2) dynamic games of complete information, (3) static games of incomplete information, (4) dynamic games of incomplete information, and (5) decision models. Students will use these tools to study industrial organization, which in turn, will enrich their understanding of how firms operate in real-world markets, and how government policies shape the competitive landscape.

### MAPPING OF COURSE LEVEL LEARNING OUTCOMES (OBJECTIVES) WITH DEGREE LEVEL LEARNING OBJECTIVES (See Annex), ASSESMENT AND TEACHING METHODS

Course level learning outcomes (objectives)	Degree level learning objectives (Number of LO)	Assessment methods	Teaching methods
CLO1. Review the fundamentals of Microeconomic theory and introduce students to the basics of game theory.	ELO1.1., ELO1.2.	Midterm, final exam, problem sets	Lecture, Seminars
CLO2. Learn how to model interactions between individuals and firms.	ELO1.1., ELO1.2.	Midterm, final exam, problem sets	Lecture, Seminars
CLO3. Learn about different game theoretic models: static games of complete information, static games of incomplete information, dynamic games of complete information, and dynamic games of incomplete information.	ELO1.1.	Midterm, final exam, problem sets	Lecture, Seminars
CLO4. Gain familiarity with key concepts of game theory: complete information, incomplete information, normal form, dynamic form, bargaining, principal-agent relation, mechanism design, adverse selection, moral hazard, conditional probabilities, partial equilibria.	ELO1.1., ELO1.2.	Midterm, final exam, problem sets	Lecture, Seminars
CLO5. Learn about different solution techniques: backwards	ELO1.1.,	Midterm, final	Lecture, Seminars

induction, IESDS, Nash Equilibria, Mixed Strategy Nash Equilibria, Subgame Perfect Nash Equilibria, Bayesian Nash Equilibria, Perfect Bayesian Equilibria, and Maximin-Minimax Method.	ELO1.2., ELO2.1.	exam, problem sets	
CLO6. Hone your skills for working in groups and individually, while facing time constraints.	ELO4.1.	Problem sets	Individual and group work
CLO7. Acquire critical thinking, logical reasoning, and problem-solving skills.	ELO4.1.	Problem sets, midterm, final exam	Seminars

### ACADEMIC HONESTY AND INTEGRITY

The ISM University of Management and Economics Code of Ethics, including cheating and plagiarism are fully applicable and will be strictly enforced in the course. Academic dishonesty, and cheating can and will lead to a report to the ISM Committee of Ethics. With regard to remote learning, ISM remind students that they are expected to adhere and maintain the same academic honesty and integrity that they would in a classroom setting.

### COURSE OUTLINE

Topic	In-class hours	Readings
The Market and Consumer Theory	4	Varian ch. 1 - 4
Slutsky Equation	4	Varian ch. 8
Introduction to static games of complete information: Normal form games and pure-strategy Nash Equilibria	4	Gibbons, ch. 1
Monopoly and Oligopoly: Cournot duopoly competition, the Power of the Monopoly, Product differentiation and price discrimination	4	Gibbons, p. 14-26; Varian ch. 25, 26, 28
Lotteries and mixed strategies (Expected Utility)	4	Gibbons, p. 29-33
Repeated games (including repeated Cournot)	4	Axelrod and Hamilton on <a href="#">Evolution of Cooperation</a> , Gibbons, p. 88-94
Midterm	4	
Introduction to dynamic games of complete information (Backwards Induction, Subgame Perfect Nash Equilibria)	4	Gibbons, ch. 2, Varian ch. 29-30
Bargaining games	4	Gibbons, ch. 2, Varian ch. 29-30
Introduction to static games of incomplete information	4	Gibbons ch.3, Varian ch. 29-30
Introduction to dynamic games of incomplete information		Gibbons ch.4, Varian ch. 29-30
Public goods and Mechanism design (Principal-Agent Models)	4	Varian ch. 37-38, Gibbons ch. 1 and 4, George Akerlof on <a href="#">the market of lemons</a>
	<b>Total: 48 hours</b>	

CONSULTATIONS	2	
FINAL EXAM	2	

#### FINAL GRADE COMPOSITION

Type of assignment	%
<i>Group Components (10%)</i>	
Problem set	10%
<i>Individual Components (90%)</i>	
Midterm examination	40%
Final examination	50%
<b>Total:</b>	<b>100</b>

#### DESCRIPTION AND GRADING CRITERIA OF EACH ASSIGNMENT

*(Provide short descriptions and grading criteria of each assignment)*

Problem set will consist of open-answer modeling questions. This is going to be a semester long group assignment. It will make up 10% of the grade.

The midterm exam will consist of multiple-choice and open-answer modeling questions. It will take place during the lecture and it will comprise 40% of the final grade. The midterm will be based on topics 1-6.

Final exam will consist of multiple choice and open-answer modeling questions. It will comprise 50% of the final grade. The final exam will be based on topics 8-12.

#### RETAKE POLICY

In case of a final grade that is lower than 5, students can sit for a retake exam. Such an exam will cover all course material. The weight of the retake is 90%. Seminar participation grade and problem sets are not subject to retake but their evaluation (if positive) will count towards the final grade with the retake exam.

#### ADDITIONAL REMARKS

The syllabus is subject to small changes. Specific chapters from the books are TBA. All readings other than the Gibbons book will be available online on the course website.

Math can feel hard sometimes – do NOT be afraid or embarrassed to ask for help. Use office hours and feel free to ask questions in class. If you do NOT understand something, clarify immediately. A small question now will likely turn into more confusion later.

#### REQUIRED READINGS

Robert Gibbons, Game Theory for Applied Economists.

Varian, Hal R., author. (2014). *Intermediate microeconomics : a modern approach*. New York :W.W. Norton & Company.

Robert Axelrod and William D. Hamilton. (1981). "The Evolution of Cooperation". Science, Vol 211, Issue 4489, pp. 1390-1396, DOI: 10.1126/science .

#### ADDITIONAL READINGS



Steven Tadelis, Game Theory: An Introduction.

**ANNEX**

**DEGREE LEVEL LEARNING OBJECTIVES**

**Learning objectives for the Bachelor of Business Management**

*Programmes:*

*International Business and Communication,*

*Business Management and Marketing,*

*Finance,*

*Industrial Technology Management,*

*Entrepreneurship and Innovation*

Learning Goals	Learning Objectives
Students will be critical thinkers	BLO1.1. Students will be able to understand core concepts and methods in the business disciplines
	BLO1.2. Students will be able to conduct a contextual analysis to identify a problem associated with their discipline, to generate managerial options and propose viable solutions
Students will be socially responsible in their related discipline	BLO2.1. Students will be knowledgeable about ethics and social responsibility
Students will be technology agile	BLO3.1. Students will demonstrate proficiency in common business software packages
	BLO3.2. Students will be able to make decisions using appropriate IT tools
Students will be effective communicators	BLO4.1. Students will be able to communicate reasonably in different settings according to target audience tasks and situations
	BLO4.2. Students will be able to convey their ideas effectively through an oral presentation
	BLO4.3. Students will be able to convey their ideas effectively in a written paper

**Learning objectives for the Bachelor of Social Science**

*Programmes:*

*Economics and Data Analytics,*

*Economics and Politics*

Learning Goals	Learning Objectives
Students will be critical thinkers	ELO1.1. Students will be able to understand core concepts and methods in the key economics disciplines
	ELO1.2. Students will be able to identify underlying assumptions and logical consistency of causal statements
Students will have skills to employ economic thought for the common good	ELO2.1. Students will have a keen sense of ethical criteria for practical problem-solving
Students will be technology agile	ELO3.1. Students will demonstrate proficiency in common business software packages
	ELO3.2. Students will be able to make decisions using appropriate IT tools
Students will be effective communicators	ELO4.1. Students will be able to communicate reasonably in different settings according to target audience tasks and situations
	ELO4.2. Students will be able to convey their ideas effectively through an oral presentation
	ELO4.3. Students will be able to convey their ideas effectively in a written paper