

# Óbudai Egyetem

## Keleti Károly Gazdasági Kar

[GVMJE1KTNC] Game Theory

<b>Institute:</b>	Vállalkozásmenedzsment Intézet (1084 Budapest, Tavaszmező u. 15-17.)		<b>Credits:</b>	2	
<b>Training:</b>	Daily	<b>Language:</b>	English	<b>Semester:</b>	2017/18/ 1
<b>Courses:</b>	ERASMUS; Gazdálkodási és menedzsment BA alapszak; Kereskedelmi és marketing; Műszaki menedzser BSc alapszak;				
<b>Responsible professor for course</b>	Dr. Kóczy Á. László		<b>Professor:</b>	Dr. Kóczy Á. László;	
<b>Number of classes (week/semester)</b>	Week	<b>Lecture</b> : 2	<b>Schoolroom practice</b>	0	<b>Laboratory practice</b> : 0
					<b>Consultation</b> : 0
<b>Félévzárás módja (Term-closing mode (requirements))</b>	Exam				
<b>Educational goal/Aim of the subject</b>	The objective of this course is to gain a basic understanding of strategic decision making, familiarise yourselves with the simple models used in game theory as well as some of the applications.				
<b>Mid-term requirements (tasks, projects, essays, exams, etc.)</b>	<p>1. Be present The formal requirement is not to miss more than 30% (this means 3 here) of the classes</p> <p>2. Be prepared We have 10 short 10-20 mins tests during the course, basically at the beginning of each class. These tests check your understanding of the previous material. Each test is worth 10 points, you must obtain 50 in total to pass. See</p>				

	test/exam regulations below. 3. There are two options to make up for missing/insufficient test results on weeks 14 and 15. These will be full-fledged tests, lasting 80 mins. See test/exam regulations below.			
Educational week (consultation)	Topic			
1.	Chapter 1. Introduction. Definition, history and examples of game theory. Cooperative vs noncooperative game theory			
2.	Chapters 2+3. Finite, two-person zero-sum games. Finite two-person games			
3.	Chapter 4. Finite extensive form games			
4.	Chapter 5. Finite games with incomplete information			
5.	Chapter 6. Noncooperative games: Extensions			
6.	Chapter 7. Repeated games			
7.	Chapter 8. An introduction to evolutionary games			
8.	Chapter 9. Cooperative games with transferable utility: Core			
9.	Chapter 9. Cooperative games with transferable utility: Shapley value, Nucleolus			
10.	Chapter 10. Cooperative game theory models: Bargaining			
11.	No class			
12.	Chapter 10. Cooperative game theory models: Matching, Assignment games			
13.	Summary			
14.	Supplimentary test 1, Exam 1			
<b>Evaluation (points, grading )</b>	<p>1. One must first obtain a signature in order to sit for an exam.</p> <p>2. Exams are open book exams, so any material you brought with you can be used.</p> <p>1. Allowed: Pens, calculators, rulers, books, dictionaries, notes (printed or hand written), telephones (in airplane mode), tablets (in airplane mode), laptops (with networks switched off).</p> <p>2. Not allowed: communication in- or outside the room.</p> <p>3. The exam consists of 3 extended questions with several sub-questions. A total of 100 points can be obtained.</p> <p>4. Bonus points can be obtained</p> <p>a. by doing well in the during-term tests: <math>\text{bonus} = (\text{test score} - 50) / 5</math>. No bonus</p>			

	<p>is obtained in weeks 14 and 15.</p> <p>b. by doing (game-theory) related research work (TDK): bonus=15 for winning the session, 10 for passing to the next round, 5 for participation. Up to double bonus for strong game theory content (difficult).</p> <p>5. The evaluations, based on the results are as follows:</p> <p>0-49,9% fail (1)</p> <p>50%-61,9% pass (2)</p> <p>62%-73,9% average (3)</p> <p>74%-84,9% good (4)</p> <p>85%-100% excellent (5)</p>			
<b>Term-closing (written/oral exam, etc):</b>	<p>Tests and exam</p> <p>Open book written exam.</p>			
<b>Obligatory reading(s)</b>	<p>Hans Peters: Game Theory – A multi-levelled approach., Springer, 2008. ISBN 978-3-540-69290-4</p>			
<b>Other Guides</b>	<p>Game theory – A primer. Financial Times/Prentice Hall, 1992</p> <p>Owen: Game theory. 3rd edition. Academic Press, San Diego, 1995. (Chapters IX-XIII).</p> <p>Myerson: Game theory. MIT Press, Cambridge, Massachusetts</p>			