

DESCRIPTION OF THE COURSE

GENERAL INFORMATION		
Course Holder	Izv. Prof. Dr. Sc. Robert Kopal dr. sc. Mirko Talajić	
The name of the college	Behavioral game theory	
Study program	Professional Graduate Study of Business Management - MBA	
Status of the College	Mandatory	
Year	2 nd Year	
Point value and method of teaching	ECTS coefficient of student workload	5
	Number of hours (P+V)	28+28

DESCRIPTION OF THE COURSE
1.1. <i>Objectives of the course</i>
Game theory is a mathematical approach to modeling behavior by analyzing strategic decisions made by interacting players. Traditional game theory works under the assumption of a player who rationally optimizes his own decisions, and consequently the outcomes. Another important assumption is that players look exclusively at their own interest. Experimental game theory extends traditional game theory by taking into account how players feel about their own outcomes and the outcomes that other players receive, limitations in strategic thinking, the influence of context, as well as the effects of learning. The aim of this course is to introduce students to the basic assumptions of traditional game theory and the process of choosing optimal strategies when making decisions (Nash balance). After that, the model of traditional game theory will be upgraded with elements of experimental game theory, which tries to solve the basic criticisms of traditional game theory, such as the assumption of rationality and exclusive focus on self-interest. Students will have the opportunity to delve deeper into the relationships of the participants in the interaction in order to better understand the decisions. Experimental game theory "observes" how players behave through experiments with careful control of participants and their incentives. Such experiments check the

accuracy of theoretical principles of behavior prediction and correct them or provide alternative approaches.
It is this interaction between experiment and theory that constitutes experimental game theory, which is a modification of the traditional through experimental evidence and the psychology of the individual and the group.
One of the key processes in modeling experimental game theory is the process of learning players in repetitive interactions.
Ultimately, this view and analysis of the learning process corrects the non-optimal balances derived from traditional game theory.
By combining traditional and experimental game theory, students will gain comprehensive knowledge of the model through which they will be able to more clearly perceive the behavior of participants in interaction and make better decisions, which should be their competitive advantage in future business and private decisions.

1.2. *Requirements for enrolment in the course*

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1.3. *Expected learning outcomes for the course*

1. Critically assess the basic features of traditional game theory and its application in practice
2. To rethink decisions in the traditional model of game theory by seeking the optimal balance in player interaction
3. Compare the features of experimental and traditional game theory
4. Judge the process of evaluating the payouts of other players from the position of each of the individual players
5. Evaluate negotiation games and coordination games through the dimensions of experimental game theory
6. Valorizing the Learning Process in the Model of Experimental Game Theory

1.4. *Course content*

Introduction to the College

Elements of traditional game theory

Balance in traditional games - simultaneous

Equilibrium in sequential games - sequential

Strategic Moves and Risks Through the Game Theory Model

Balances in games with probabilistic selection of pure strategies (mixed strategies)

Basic elements of the experimental game theory model

Comparison of Traditional Game Theory and Experimental Game Theory

Examples of the application of experimental game theory in practice Results of Experimental Game Theory in Trust Games, Ultimate Games, and Dictator Games Analysis of the model of experimental game theory – the ultimatum game and the dictator's game Model Analysis of Experimental Game Theory – Trust Games Experimental Game Theory Model in the Negotiation Game Structured and unstructured negotiation Negotiation Game Model in Situations of Incomplete Information Analysis of Experimental Game Theory Models in Coordination Games Game Battle of the Sexes The game of entering the market Learning Process in Experimental Game Theory – Types of Learning Signaling Games and Adaptive Dynamics through the Dimensions of Experimental Game Theory The Measurement and Importance of Reputation in Experimental Game Theory		
1.5. <i>Types of teaching (put X)</i>	☒ lectures ☐ seminars and workshops ☒ exercises ☐ Distance education ☐ Field Teaching	☒ Independent tasks ☐ Multimedia & Network ☐ laboratory ☐ Mentoring work ☐ Other _____
1.6. <i>Student obligations</i>		
<i>The obligations of students are prescribed in detail by the Statute, the Ordinance on Studies and the Instructions on Student Obligations. The key obligations of students are:</i> <i>ATTENDANCE AT CLASSES: students are obliged to attend classes, actively follow lectures and exercises, and participate constructively in classes, and in order to acquire the right to take the exam, it is necessary to attend classes in the percentages prescribed by the Study Regulations. For each student, their presence in class is recorded through the Infoeduka digital office system. The minimum obligations are;</i>		

- Full-time students must attend at least 70% of the total number of classes to be eligible to sign.
- Part-time students need to attend at least 50% of the total number of classes to be eligible to sign.

PASSING EXAMS: in order to achieve a positive grade in the subject, it is necessary to achieve at least 54 points in the subject, but also at least 50% of points for each learning outcome. The method of taking the exam is described in more detail in the item Assessment and evaluation of students' work during classes and at the final exam.

***FINAL EXAM** – a student who has not met the conditions for passing the exam during the continuous examination of knowledge (has achieved a total of at least 54 points in the course and has met the lower point threshold of adoption of each learning outcome, i.e. a minimum of 50% of the points of each learning outcome), may take the learning outcomes of the course at the final exam.

WRITTEN EXAM: the student is obliged to take a written exam that verifies the acquisition of advanced theoretical knowledge about the features of traditional game theory and its application in practice, as well as its comparison with experimental game theory.

PRACTICAL WORK: the student is obliged to participate in solving individual and group practical tasks and exercises with the aim of practicing the skill of practical application of theoretical knowledge on the traditional and experimental model of game theory through searching for an optimal balance in player interaction, evaluating player payouts, valorizing the learning process in the model of experimental game theory and through the application of different types of games, such as negotiation games and coordination games, through the prism of experimental game theory.

***CONTINUOUS EXAMINATION:** In order to make students progress more efficiently in class, continuous examinations are carried out (3 intermediate exams). In this way, students acquire smaller teaching units and master the subject material more easily.

1.7. Student Work Tracking (Add X to the appropriate tracking format)

Attending classes	x	Teaching activity		Seminar paper		Experimental work	
Written exam	x	Oral exam		Essay		Research	
Project		Continuous Assessment*		Report		Practical work	x
Portfolio							

1.8. Assessment and evaluation of students' work during classes and at the final exam

Evaluation and evaluation of students' work during classes and at the final exam is carried out on the basis of the Regulations on Studying of the EFFECTUS University of Applied Sciences. Allocation of points according to the forms of student work monitoring:

	Attending classes	Written exam	Practical work	Altogether
I1		16		16
I2			16	16
I3		16		16
I4			16	16
I5			16	16
I6		16		16
OUT OF OUTCOME	4			4
ALTOGETHER	4	48	48	100

Linking learning outcomes, teaching methods and knowledge assessment methods:

FORMS OF TRACKING	NAME OF LEARNING OUTCOMES	TEACHING METHOD	KNOWLEDGE ASSESSMENT METHOD	Maximum number of points
Written exam	OUTCOME 1 <i>Critically assess the basic features of traditional game theory and its application in practice</i>	lecture	Essay-problem questions that are required to be answered that demonstrate the identification and definition of key terms, their connection and appropriate argumentation of a higher degree of complexity	16
		Asking questions		
		discussion		
Practical work	OUTCOME 2 <i>To rethink decisions in the traditional model of game theory by seeking the optimal balance in player interaction</i>	lecture	Computational tasks with appropriate argumentation and interpretation	16
		discussion		
		Rehearsal and feedback		
Written exam	OUTCOME 3 <i>Compare the features of experimental and traditional game theory</i>	lecture	Essay-problem questions that are required to be answered that demonstrate the identification and definition of key terms, their connection and appropriate argumentation of a higher degree of complexity	16
		discussion		
		Asking open-ended questions		
Practical work	OUTCOME 4	lecture	Computational tasks with appropriate	16



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	<i>Judge the process of evaluating the payouts of other players from the position of each of the individual players</i>	<i>Rehearsal and feedback</i>	<i>argumentation and interpretation</i>	
<i>Practical work</i>	<i>OUTCOME 5 Evaluate negotiation games and coordination games through the dimensions of experimental game theory</i>	<i>lecture</i>	<i>Practical tasks that test the skill of practical application of knowledge about different types of games in solving specific business problems</i>	<i>16</i>
		<i>Asking open-ended questions</i>		
		<i>Rehearsal and feedback</i>		
<i>Written exam</i>	<i>OUTCOME 6 Valorizing the Learning Process in the Model of Experimental Game Theory</i>	<i>lecture</i>	<i>Problem questions with explanations and argumentation that require problem identification, analysis, synthesis, linkage, and critical judgment</i>	<i>16</i>
		<i>discussion</i>		
		<i>Asking open-ended questions</i>		
<i>Attending classes</i>	<i>All outcomes</i>	<i>Lectures and exercises</i>	<i>Attendance records</i>	<i>4</i>
	<i>TOTAL POINTS</i>			<i>100</i>

<i>Type of student workload</i>	<i>Student Load Hours</i>	<i>ECTS credits</i>
Attending contact classes	56	1,87
Field Trips/Visits Outside the College	0	0
Independent study/research	30	1
Out-of-classroom preparation and preparation of seminars/presentations	0	0
Work on an out-of-classroom project assignment	0	0
Independent preparation for exams and exam time	60	2
Consultation activities	4	0,13
Other	0	0
TOTAL ECTS credits	150	5

RATING:

In order to achieve a positive grade in the course, the student must cumulatively meet two conditions: achieve a total of at least 54 (fifty-four) points in the course and meet the lower point threshold for the adoption of each individual learning outcome, which is 50% of the total points of the learning outcomes.

Grades are calculated based on the following distribution of points:

<i>SCORE</i>	<i>RATING</i>
<i>0,00 – 53,90</i>	<i>Insufficient (1)</i>
<i>54,00 – 64,90</i>	<i>Sufficient (2)</i>
<i>65,00 – 79,90</i>	<i>Good (3)</i>
<i>80,00 – 89,90</i>	<i>Very good (4)</i>
<i>90.00 and more</i>	<i>Excellent (5)</i>

Grading is carried out in a transparent manner by collecting points. The course is evaluated with 100.00 points (with the possibility of achieving an additional 8 points on the Challenge learning outcome).

CHALLENGE LEARNING OUTCOME - the student has the opportunity to earn an additional maximum of 8 points through the Challenge learning outcome; The student independently chooses one of the activities proposed in the first lesson, and has the opportunity to independently propose an activity with which he wants to increase the number of points and, with the consent of the course holder, achieves them according to the criteria of the course. Points for the Challenge learning outcome are not distributed according to the learning outcomes, but the number achieved makes an additional number of points to the total number of points achieved according to the learning outcomes.

Before taking the final written exam, each student must meet the prescribed conditions, which primarily means that they have attended the % of classes determined by the Study Regulations and that they have received an electronically encrypted permission to take the exam.

1.9. Required reading and number of copies in relation to the number of students currently attending classes in the course

<i>Title</i>	<i>Number of copies</i>	<i>Number of students</i>
<i>Kopal, R. and Korkut, D. (2020): Introduction to Game Theory, 4th Unchanged Edition, Zagreb: Effectus – University College</i>	<i>5*</i> <i>*students receive compulsory literature in permanent ownership</i>	<i>60</i>

1.10. Supplementary literature

Camerer, C. F. (2003): Behavioral Game Theory: Experiments in Strategic Interaction, Princeton, NJ: Princeton University Press

Camerer, C. F. & Ho, Teck & Chong, Juin-Kuan. (2004): Behavioral Game Theory: Thinking, Learning, and Teaching. 10.1057/9780230523371_8.

1.11. Ways of quality monitoring that ensure the acquisition of output knowledge, skills and competencies

- analysis of exam results, achieved results, level of understanding and knowledge during exercises, practical tasks and group work,*
- conducting a survey among students,*
- The evaluation of the teacher,*
- achieved results and level of knowledge presented during the preparation and defense of the final thesis (students who choose a graduate thesis in this course),*
- analysis of the Quality Centre's reports and*
- Feedback from students who have already graduated and their employers on the usefulness of the content of this course in the performance of the work they do.*