

DESCRIPTION OF THE COLLEGE

GENERAL INFORMATION		
Course Holder	Ph.D. Darija Korkut	
Name of the College	Neuroeconomics	
Study program	Professional Graduate Study of Business Management - MBA	
Status of the College	Mandatory	
Code	N-22	
Year	Year 2	
Point value and method of teaching	ECTS Student Workload Coefficient	6
	Number of hours (P+V)	28+28

DESCRIPTION OF THE COLLEGE
<i>1.1. Objectives of the course</i> Neuroeconomics is a relatively new interdisciplinary field that has developed at the intersection of psychology, economics and neuroscience. Its goal is to understand human decision-making in the social and economic context at the descriptive (functional and brain) level. The aim of the course is to provide knowledge of decision-making, management and management from the perspective of new discoveries in neuroscience and cognitive sciences and to explore the rapidly growing areas of behavioral economics and neuromarketing. Through the course, students will gain a better and more comprehensive insight into the complementary methodological contributions of behavioral economics, cognitive psychology, neurophysiology, and neuroimaging. The course analyzes the process of information processing in the brain, the structures and mechanisms that underlie cognitive and emotional behavior. Part of the course is dedicated to illustrating examples and experiences of neuroscience and methodological approach. The models developed in the course will give students a theoretical insight into the problems that arise in economics and business and will enable them to make better predictions. Upon completion, students should be able to design and conduct research in the field of neuroeconomics. Students will learn how neuromarketing can help businesses gain a deeper understanding of their consumers – how they think, how they make decisions, and how they buy.
<i>1.2. Requirements for enrolment in the course</i>

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1.3. <i>Expected learning outcomes for the course</i>
Students should be able to: 1. Critically assess the key concepts, goals and tasks of neuroeconomics as an interdisciplinary science. 2. Analyze cognitive neuroscience methods used in decision and behavior research. 3. Apply knowledge about the brain and its role in the formation of preferences and decision-making. 4. Propose relevant theories and models from brain science and/or economics to describe and solve a specific (business) problem. 5. Recommend the application of modern tools used in the field of neuroeconomics and their implications for economic decision-making. 6. Apply the tools that are needed to understand and use neuromarketing in a business or organization.
1.4. <i>The content of the course</i>
Introduction to the course Key concepts, goals and tasks of neuroeconomics - How does neuroscience inform the economy? - History of Neuroeconomics - The main assumptions of neuroeconomics - Experimental Economics and Neuroeconomics Cognitive neuroscience methods - Cognitive neuroscience - Methods of neuroscientific research The brain and its role in the formation of preferences and decision-making - Anatomy of the brain - Brain processes and localization of brain functions - Neural networks - Affective Decision-Making Mechanisms: Neuroeconomics and Emotions - Psychopathology and brain damage in humans Theories and models from brain science - Expected choice theory

Intertemporal decisions <i>Social Decision-Making: Trust, Fairness and Reciprocity</i> Tools of Neuroeconomics Brain models of decision-making and choice Decision-making phases in neuroeconomics Decision Programming: <i>(Drift) Diffusion Model</i> Neuromarketing Neuromarketing and consumer behavior Biometric measurements Neurometric measurements Case studies, practical tasks		
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>Obligations of students</i>		
<i>Student obligations are prescribed in detail by the Statute, the Study Regulations and the Instructions on Student Obligations. The key obligations of students are:</i> ATTENDANCE AT CLASSES: <i>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 commitments are;</i> <i>Full-time students must attend at least 70% of the total number of classes to be eligible to sign.</i> <i>Part-time students need to attend at least 50% of the total number of teaching hours to be eligible to sign.</i> EXAM: <i>in order to achieve a positive grade in a 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.</i> <i>*FINAL EXAM – a student who has not met the conditions for passing the exam during the continuous examination (has achieved a total of at least 54 points in the course</i>		

and met the lower point threshold for the acquisition of each learning outcome, i.e. at least 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 required to take a written exam that verifies the acquisition of advanced theoretical knowledge related to recent knowledge in neuroeconomics, experimental economics and cognitive neuroscience and related methods and concepts. This form of verification will also test theoretical knowledge about the anatomy and role of the brain in the formation of preferences and decision-making, as well as affective decision-making mechanisms.

PRACTICAL WORK: the student is obliged to participate in solving individual problem tasks that verify the acquisition of knowledge and skills necessary to understand the theory of expected choice, intertemporal decisions and concepts of social decision-making, and practical knowledge of decision programming models is also tested.

GROUP PROJECT: the student is required to conduct an analysis of a neuromarketing campaign for a specific product or service using biometric and neurometric measurements to study the emotional and cognitive reactions of consumers to selected marketing stimuli. In this way, they will apply theoretical knowledge of neuromarketing in practice and develop analytical skills in the interpretation of biometric and neurometric data.

* **CONTINUOUS ASSESSMENT:** In order to improve the efficiency of students' progress in teaching, continuous examinations (3 intermediate exams) are carried out. In this way, students acquire smaller teaching units and master the subject material more easily.

1.7. Monitoring of student work (add X with the appropriate form of monitoring)

Attendance	x	Teaching activity		Term paper		Experimental work	
Written exam	x	Oral exam		Essay		Research	
Design	x	Continuous assessment*		Paper		Practical work	x
Portfolio							

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

Assessment and evaluation of students' work during classes and at the final exam is carried out on the basis of the Study Regulations of the EFFECTUS University of Applied Sciences.

Allocation of points according to the forms of student work monitoring:

	Attendance	Written exam	Design	Practical work	Total
I1		16			16
I2		16			16
I3		16			16
I4				16	16
I5				16	16
I6			16		16
OUT OF THE BOX	4				4
TOTAL	4	48	16	32	100

Linking learning outcomes, teaching methods and methods of assessment of knowledge:

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FORMS OF TRACKING	NAME OF LEARNING OUTCOMES	TEACHING METHOD	METHOD OF ASSESSMENT KNOWLEDGE	Maximum number of rating points
Written exam	OUTCOME 1 <i>Critically assess the key concepts, goals and tasks of neuroeconomics as an interdisciplinary science.</i>	Lecture	<i>An exam in the form of an essay on a given topic: essay-type questions are used to test the acquisition of advanced theoretical knowledge related to recent knowledge in neuroeconomics, experimental economics and cognitive neuroscience, as well as related methods and concepts. This form of verification will test both theoretical and practical knowledge about the anatomy and role of the brain in the formation of preferences and decision-making, as well as affective decision-making mechanisms.</i>	48
		Asking questions		
		Discussion		
	OUTCOME 2 <i>Analyze cognitive neuroscience methods used in decision and behavior research.</i>	Lecture		
		Discussion		
		Asking open-ended questions		
	OUTCOME 3 <i>Apply knowledge about the brain and its role in the formation of preferences and decision-making.</i>	Lecture		
		Discussion		
		Asking open-ended questions		
Practical work	OUTCOME 4 <i>Propose relevant theories and models from brain science and/or economics to</i>	Lecture	<i>Problem tasks: individual problem tasks test the acquisition of knowledge and skills necessary to understand the theory of expected choice, intertemporal decisions and concepts</i>	32
		Asking open-ended questions		

	describe and solve a specific (business) problem.		of social decision-making, and practical knowledge of decision programming models will also be tested.	
	OUTCOME 5 Recommend the application of modern tools used in the field of neuroeconomics and their implications for economic decision-making.	Lecture		
		Asking open-ended questions		
		Training and feedback		
Design	OUTCOME 6 Apply the tools that are needed to understand and use neuromarketing in a business or organization.	Guided training	Group project: Students will conduct an analysis of a neuromarketing campaign for a specific product or service by using biometric and neurometric measurements to study the emotional and cognitive responses of consumers to selected marketing stimuli. In this way, they will apply theoretical knowledge of neuromarketing in practice and develop analytical skills in the interpretation of biometric and neurometric data.	16
Attendance	All outcomes	Lectures and exercises	Attendance records	4
	TOTAL POINTS			100

<i>Type of student workload</i>	<i>Hours of student workload</i>	<i>ECTS credits</i>
Attending face-to-face classes	56	1,87
Field trips/visits outside the college	0	0
Independent study/research	40	1,33
Out-of-classroom preparation and preparation of seminars/presentations	25	0,83
Work on an out-of-classroom project assignment	0	0
Independent preparation for exams and exam time	44	1,47
Consultation activities	15	0,50
Other	0	0
TOTAL ECTS credits	180	6

JUDGING:

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>NUMBER OF POINTS</i>	<i>RATING</i>
<i>0,00 – 53,90</i>	<i>Insufficient (1)</i>
<i>54,00 – 64,90</i>	<i>Sufficient (2)</i>

65,00 – 79,90	Good (3)
80,00 – 89,90	Very Good (4)
90.00 and more	Excellent (5)

The evaluation is carried out in a transparent manner by collecting points. The course is valued 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 by 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 subject. Points for the Challenge learning outcome are not distributed according to the learning outcomes, but the number achieved is 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 literature and number of copies in relation to the number of students currently attending classes in the course

Title	Number of copies	Number of students
Glimcher, P., and Fehr, E. (2013): <i>Neuroeconomics: Decision Making and the Brain: Second Edition. Elsevier Inc.</i>	5* *students receive compulsory literature in permanent ownership	60

1.10. Supplementary literature

- Šimić, G. et al. (2019). *Introduction to the neuroscience of learning and memory*. Ljevak Publishing House
- Šimić, G. et al. (2020). *An introduction to the neuroscience of emotions and feelings*. Ljevak Publishing House
- Lindström, Martin (2009). *Brand Sense: The Sensory Branding Revolution*, M. E. P.
- Kahneman, D. (2013). *Think, Fast and Slow*, Mosaic Book
- Lindström, Martin (2012). *KUPOLOGY: Truths and Lies About Why We Buy*, Profile
- Botvinick, M. and Braver, T. (2015). "Motivation and cognitive control: From behavior to neural mechanism." *Annual Review of Psychology*, 66(1), 83-113.
- Genco, S. J., Pohlman, A. P., and Steidl, P. (2013). *Neuromarketing for Dummies*, 1st edition, Mississauga (ON): John Wiley and Sons, Canada.
- Mavor, A., Koller, M., Lee, N., Chamberlain, L., & Ransmayr, G. (2013). *Neuromarketing and consumer neuroscience: contributions to neurology*. *BMC Neurology*, 13(1), 13.
- Genco, S.J., Pohlman, A.P., and Steidl, P (2013). *Neuromarketing for Dummies*, 1st edition, Mississauga (ON): John Wiley and Sons, Canada.
- Mavor, A., Koller, M., Lee, N., Chamberlain, L., & Ransmayr, G. (2013). *Neuromarketing and consumer neuroscience: contributions to neurology*. *BMC Neurology*, 13(1), 13.
- Camerer, C., Loewenstein, G., and Prelec, D. (2005). *Neuroeconomics: How neuroscience can inform economics*. *Journal of Economic Literature*, 43(1), 9-64.
- Loewenstein, G., Rick, S., Cohen, J. (2007). *Neuroeconomics*. *Annual Review of Psychology*, 59:1-26
- Kable, J.W. (2011). *The cognitive neuroscience toolkit for the neuroeconomist: A functional overview*, *Journal of Neuroscience, Psychology, and Economics*, 4(2), 63-84.
- Baars, B. J., & Gage, N. M. (2013). *Fundamentals of cognitive neuroscience: A beginner's guide*. Elsevier Academic Press.
- Ramsøy, T. Z. (2015). *Introduction to Neuromarketing & Consumer Neuroscience*. Neurons Inc.
- Damasio, Antonio R. (1994). *Descartes' error : emotion, reason, and the human brain*. G.P. Putnam.

1.11. Quality monitoring methods that ensure the acquisition of output knowledge, skills and competences

- analysis of exam results, achieved results, level of understanding and knowledge during exercises, practical tasks and group work,
- conducting a survey among students,
- The teacher's evaluation,
- the achieved results and the level of knowledge presented during the preparation and defense of the final thesis (of students who choose the graduate thesis in this subject),
- analysis of the reports of the Quality Center 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.