



Subject card

Subject name and code	Introduction to cognitive science, PG_00045307						
Field of study	Data Engineering						
Date of commencement of studies	October 2023		Academic year of realisation of subject		2024/2025		
Education level	first-cycle studies		Subject group		Optional subject group Humanistic-social subject group		
Mode of study	Full-time studies		Mode of delivery		at the university		
Year of study	2		Language of instruction		English		
Semester of study	4		ECTS credits		3.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Department of Social Sciences and Philosophy -> Faculty of Management and Economics						
Name and surname of lecturer (lecturers)	Subject supervisor		dr Mateusz Bonecki				
	Teachers		dr Mateusz Bonecki				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	30.0	0.0	0.0	0.0	30
	E-learning hours included: 0.0						
Learning activity and number of study hours	Learning activity	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	Number of study hours	30		2.0		43.0	75
Subject objectives	During the classes students will learn how the interdisciplinary project of the cognitive sciences was created and what are its basic paradigms. Fundamental problems within this field of inquiry will be discussed along with the most typical attempts at solving them.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_W11] has knowledge of the role of man in social structures and the impact of their decisions on economic situation of business entities		Student knows the history of cognitive science, its basic paradigms and assumptions.		[SW1] Assessment of factual knowledge		
	[K6_K05] understands the need for self-improvement through systematic acquisition of knowledge and skills.		Student is able to present the latest trends and developments in cognitive science.		[SK2] Assessment of progress of work		
	[K6_U14] can apply knowledge from the field of humanities or social sciences to solve problems.		Student is able to analyze and explain away given problem within the framework of a given research perspective.		[SU2] Assessment of ability to analyse information [SU4] Assessment of ability to use methods and tools		

Subject contents	<p>1. The specificity of explaining in cognitive science. What is explanation? Competence and realization, functional and mechanistic explanation.</p> <p>2. Symbolic computation. Newell's and Simon's GPS as a model of cognition.</p> <p>3. Neurologically inspired computation. Marr's theory of vision, three levels of explanation.</p> <p>4. Numerologically inspired computations. Connectionist model of learning of English verbs in the past tense by Rumelhart and McClelland.</p> <p>5. Dynamic systems in explanation of children's developmental processes (Thelen, Smith).</p> <p>6. Probabilistic models (Bayesian models) of human rationality (Oaksford, Chater).</p> <p>7. Logic and thinking: Wason's selection task from the perspective of non-monotonic logics.</p> <p>8. Behavioral or cognitive robotics? Phonotaxis of crickets modelled by a robot.</p> <p>9. Explanatory role of representation. Classical approach.</p> <p>10. Explanatory role of representation. Imagery debate.</p> <p>11. Explanatory role of representation. Connectionism.</p> <p>12. Explanatory role of representation. Behavioral robotics.</p> <p>13. Simulations, computations, modelling. Chinese room. Artificial Intelligence.</p> <p>14. Modelling in cognitive science. Explanatory pluralism.</p>		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Active participation	40.0%	30.0%
	Final test	50.0%	70.0%
Recommended reading	<p>Basic literature</p> <p>1. JOHNSON-LAIRD, P., 1999, Komputer a umysł. Wstęp do nauk poznawczych, przeł. P. Jaśkowski, Protex, Poznań.</p> <p>2. PINKER, S., 2002, Jak działa umysł, przeł. M. Koraszewska, KiW, Warszawa.</p> <p>3. URCHS, M., 2009, O procesorach i procesach myślowych. Elementy kognitywistyki, Wydawnictwo UMK, Toruń.</p> <p>4. CLARK, A., 2001, Mindware: An Introduction to the Philosophy of Cognitive Science, Oxford University Press, Oxford.</p>		

	Supplementary literature	<p>1. E. Feigenbaum i J. Feldman, Maszyny matematyczne a myślenie, PWN, Warszawa.</p> <p>2. John Searle, Umysły, mózgi i programy, w: B. Chwedeńczuk (red.), Filozofia umysłu, Warszawa 1995.</p> <p>3 .R. Piłat, Czym jest świadomość, Warszawa 1993.</p>
	eResources addresses	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed	<p>Enumerate and discuss basic theories of mind</p> <p>Discuss the problem of representation in cognitive sciences</p> <p>What is the embodied cognition?</p> <p>Discuss the probabilistic model of cognition.</p>	
Work placement	Not applicable	

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