GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Introduction to cognitive science, PG_00045307		
Field of study	Data Engineering		
Date of commencement of studies	October 2022	Academic year of realisation of subject	2023/2024
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 Philosophy and Science Methodology -> Faculty of Management and Economics		
Name and surname of lecturer (lecturers)	Subject supervisor	dr Jakub Gużyński	
	Teachers	dr Jakub Gużyński	

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_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
[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_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

Subject contents

- Interdisciplinary nature of cognitive science.
- The foundations of cognitive science: behaviorism, theory of computation, formal analysis of language, information-processing models.
- Marrs levels of explaination.
- The turn to the brain. Basic brain anatomy. Brain mapping. The neural networks model. Connectionism.
- Mind and computer. The physical symbol systems hypothesis. Turing test. Searles Chineese room.
- Bayesianism in cognitive science.
- The dynamical systems theory in cognitive science.
- Minds architecture. Modularity of mind. The massive modularity hypothesis.
- Mindreading. Pretend play and metarepresentation. SAM, TESS and TOMM.
- Emotions in cognitive science. Cognition, perception and decision making.
- Cognitive linguistics. The language of thought. Models of language learning.
- Artificial Intelligence. Robotics. Expert systems. Machine learning. Deep learning.
- Situated cognition. Embodied cognition. Extended mind thesis. Enactivism.
- Neuroeconomics. Behavioral finance. Cognitive marketing.
- Evolutionary psychology. Evolution and cognitive processes. Sex differences in cognition.

Prerequisites and co-requisites

<table>
<tr><td>Assessment methods and criteria</td><td colspan="2"><table>
<tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr>
<tr><td>Final test</td><td>50.0%</td><td>60.0%</td></tr>
<tr><td>Prezentacja multimedialna</td><td>40.0%</td><td>40.0%</td></tr>
</table></td></tr>
<tr><td rowspan="3">Recommended reading</td><td>Basic literature</td><td>José Luis Bermúdez, Cognitive Science. An Introduction to the Science of the Mind. Third edition, Cambridge University Press, 2020.

Jay Friedenberg, Gordon Silverman, Cognitive Science. An Introduction to the Study of Mind Third Edition. SAGE Publications, 2016

Philip N. Johnson-Laird, How We Reason, Oxford University Press, 2006.</td></tr>
<tr><td>Supplementary literature</td><td>Vyvyan Evans, Melanie Green, Cognitive Linguistics. An Introduction. Edinburgh University Press, 2006.

David Lee, Cognitive Linguistics. An Introduction. Oxford University Press, 2001.

William Bechtel, George Graham, A Companion to Cognitive Science. Blackwell Publishers, 1998.

Steven Pinker, How The Mind Works, Penguin Books, 1997.</td></tr>
<tr><td>eResources addresses</td><td>Adresy na platformie eNauczanie:
Introduction to cognitive science - Moodle ID: 35809
https://enauczanie.pg.edu.pl/moodle/course/view.php?id=35809</td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td colspan="2">Enumerate and discuss basic theories of mind

Discuss the problem of representation in cognitive sciences

What is the emobodied cognition?

Discuss the probabilistic model of cognition.</td></tr>
<tr><td>Work placement</td><td colspan="2">Not applicable</td></tr>
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