GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Elements of logic and epistemology, PG_00045329		
Field of study	Data Engineering, Data Engineering		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2026/2027
Education level	first-cycle studies	Subject group	Obligatory subject group in the field of study Humanistic-social subject group
Mode of study	Full-time studies	Mode of delivery	at the university
Year of study	1	Language of instruction	English
Semester of study	1	ECTS credits	2.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Philosophy and Science Methodology -> Faculty of Management and Economics -> Faculties of Gdańsk University of Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	dr Jakub Gużyński	
	Teachers	dr Jakub Gużyński	

Lesson types

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	18.0	50

Subject objectives

This course serves as an introduction to the problems of epistemology and logic.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_W02] demonstrates advanced preparation in methods and techniques for formulating and solving problems	Can use logic tools and solve complex problems of an abstract nature.	[SW1] Assessment of factual knowledge
[K6_K01] demonstrates awareness of legal, ethical and cultural diversity issues, making socially responsible decisions	Student is aware of the social and ethical dimensions of issues related to knowledge and cognition.	[SK5] Assessment of ability to solve problems that arise in practice

Subject contents	Course content – exercises What is philosophy, what is logic, what is epistemology? Basic concepts of logic. Propositional calculus. Basic logic functions. Tautologies. Proof by contradiction. Logical rules of inference. Logical relations. Common logical mistakes. Paradoxes of material implication. Unearthing the old epistemological dispute on the source of knowledge. Platos rationalism and Aristotles empiricism. Modern turn to epistemology. Rationalism of Descartes and Leibnitz. British empiricism of Bacon and Locke. Birth of modern science. Idealism vs realism. *A priori* vs *a posteriori* in cognition and knowledge. Kants answer to David Humes scepticism. Kants critical (transcendental) idealism and novelty of his approach. Correspondence theory of truth. Scepticism and sceptic arguments in epistemology. Problem of perception, argument from illusion. Do we reflect external world directly in our consciousness/mental representations? Semantic, pragmatic and coherent theories of truth. Contemporary epistemology. Knowledge as justified belief. Sources of knowledge: perception, memory, introspection, testimony. Gettiers challenge. Structures of justification (foundational, coherent, infinitism). Externalism vs internalism. Introduction to the philosophy of the mind: major controversies. Body-mind problem. Consciousness, *qualia*, supervenience. Conceptions of naturalized mind and the influence of evolutionary psychology. Turing on machines and Searles Chinese room argument. Hilary Putnam and brains in vat. Linguistic turn. Ludwig Wittgenstein: from examining the consciousness to the philosophy of language. Austin: we do things with words! The essence of American neopragmatism: Richard Rorty. Philosophy of science. Demarcation problem. Neopostitivism and protocol sentences. Problem of induction. Quine-Duhem theorem applied to sciences. Karl Poppers falsification program. Henri Poincaré and Kazimierz Ajdukiewicz on conventionalism. Thomas Samuel Kuhn on scientific revolution. Concept of paradigm. Classical and non-classical sociology of knowledge. Science and technology studies. Bruno Latour on technology and non-human agency. Expert and layman knowledge.
Prerequisites and co-requisites	
Assessment methods and criteria	

Subject passing criteria	Passing threshold	Percentage of the final grade
Participation in the classes	50.0%	40.0%
Final test	50.0%	60.0%

<table>
<tr><td rowspan="3">Recommended reading</td><td>Basic literature</td><td>Plato. 1992. Republic, trans. G. M. A. Grube, C. D. C. Reeves. Hackett Publishing.

René Descartes. 2006. A Discourse on the Method of Correctly Conducting Ones Reason and Seeking Truth in the Sciences, trans. Ian Maclean. Oxford University Press.

Immanuel Kant. 2004. Prolegomena to Any Future Metaphysics That Will Be Able to Come Forward as Science with Selections from the Critique of Pure Reason, trans. Gary Hatfield. Cambridge University Press.

John R. Searle. 1980. Minds, brains, and programs. The Behavioral And Brain Sciences 3, 417-457.

John. L. Austin. 1962. How to Do Things with Words. Oxford University Press.

Karl Popper. 2002. The Logic of Scientific Discovery. Routledge.</td></tr>
<tr><td>Supplementary literature</td><td>Ernest Sosa, Jaegwon Kim, Jeremy Fantl, Matthew McGrath. 2008. Epistemology. An Anthology. Blackwell Publishing.

Patrick J. Hurley, Lori Watson. 2018. A Concise Introduction to Logic. Cengage Learning.</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td colspan="2">1. What is apriorism.

2. Find out if given formula is a tautology of a Propositional Calculus.

3. Examine given sentences and find out if conclusion follows from the premises.

4. Describe the internalism-externalism controversy.

5. What is correspondence theory of truth.</td></tr>
<tr><td>Practical activites within the subject</td><td colspan="2">Not applicable</td></tr>
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