GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	PRAGMATIC LOGIC FOR ENGINEERS, PG_00044760
Field of study	Engineering Management

Date of commencement of studies	October 2022	Academic year of realisation of subject	2022/2023
Education level	first-cycle studies	Subject group	Obligatory subject group in the field of study Humanistic-social subject group
Mode of study	Part-time studies (on-line)	Mode of delivery	blended-learning
Year of study	1	Language of instruction	Polish
Semester of study	1	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 hab. Andrzej Lisak	
	Teachers	dr hab. Andrzej Lisak	

Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	16.0	8.0	0.0	0.0	0.0	24
	E-learning hours included: 18.0						

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	24	6.0	45.0	75

Subject objectives	The goal of the classes is to cultivate student's methodological self-awareness, their ability to reason and carry out proper thinking operations (inference, classification) and to practice the ability to recognize common logical fallacies in reasoning.

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[K6_U07] can work independently and in a team	Learns how to evaluate the logical correctness of a given scientific hypothesis.	[SU2] Assessment of ability to analyse information
	[K6_W06] has a basic knowledge of methods and tools for conducting research and analyses related to particular areas of the enterprise's operations and its environment	Learns the basic logical inference and deduction.	[SW1] Assessment of factual knowledge
	[K6_U06] uses basic theoretical knowledge to solve selected organizational problems, design technical solutions and manage projects, including engineering projects	Student is aware of the limits of the application of logical tools in methodical problem-solving and understands the role of rhetoric in the construction of convincing arguments.	[SU1] Assessment of task fulfilment

Subject contents	1. Basic information on semiotics. Langauge as a system of signs. Syntactic categories. The semiotic function of expressions.
	2. Names and concepts. Logical division and classification.
	3. Definitions.
	4. Sentence and proposition.
	5. Logical fallacies and sources of misunderstandings.
	6. Idea of formal logic. Propositional calculus. Logical tautologies.
	7. Functional calculus.
	8. Syllogisms.
	9. Basic notions of relation theory.
	10. Direct and indirect reasoning. Drawing conclusions.
	11. Types of inference. Deductive inference and probabilistic inference.
	12. Role of inference in description and explanation of the world.
	13. Logical structure of science.
	14. Conversational logic and an art of argumentation.
	15. Limits of the application of logical instruments in reasoning. Art of rhetoric.

Prerequisites and co-requisites	

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Active participation	50.0%	15.0%
	Oral exam	50.0%	70.0%
	Assignements	50.0%	15.0%

Recommended reading	Basic literature	T. Hołówka, Kultura logiczna w przykładach, PWN Warszawa 2005.
	Supplementary literature	K. Szymanek, Sztuka argumentacji. Słownik terminologiczny, PWN Warszawa 2001. R. Wójcicki, Wykłady z logiki z elementami teorii wiedzy, Scholar Warszawa 2003.
	eResources addresses	Adresy na platformie eNauczanie: Logika pragmatyczna dla inżynierów (online) - Moodle ID: 25573 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=25573

Example issues/ example questions/ tasks being completed	What is logical inference.
	Check if the given fomula is tautology belongs to the classical logical calculus.
	What is logical division.
	What are syllogisms?
Work placement	Not applicable