GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	, PG_00061833		
Field of study	Management and Production Engineering		
Date of commencement of studies	February 2023	Academic year of realisation of subject	2023/2024
Education level	second-cycle studies	Subject group	
Mode of study	Full-time studies	Mode of delivery	at the university
Year of study	2	Language of instruction	Polish
Semester of study	3	ECTS credits	4.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Zakład Materiałoznawstwa I Technologii Materiałowych -> Institute of Manufacturing and Materials Technology -> Faculty of Mechanical Engineering and Ship Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	prof. dr hab. inż. Dionizy Czekaj	
	Teachers		

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	30.0	0.0	15.0	0.0	0.0	45

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	45	0.0	0.0	45

Subject objectives

To introduce students with the mathematical foundations and selected applications of game theory, especially for solving conflict situations or cooperation.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K7_W01] knows and understands to a greater extent selected issues in the field of management and quality sciences and mechanical engineering, their location in the field of social sciences and engineering and technical sciences, as well as relationships with related disciplines, and sees the possibility of applying the knowledge in practice.	The student knows and understands selected issues in the field of management and quality science as well as mechanical engineering.	[SW1] Assessment of factual knowledge
[K7_K02] is aware of the importance and understanding of non-technical aspects and effects of engineering activities, including its impact on the environment, and the related responsibility for decisions made demonstrates knowledge of actions to reduce risk and anticipate the social impact of engineering and manufacturing activities	The student is aware of the non-technical aspects and effects of engineering activities.	[SK2] Assessment of progress of work
[K7_K01] is aware of the need to expand knowledge and verify the methods of solving problems by consulting experts	The student understands the need to expand their knowledge.	[SK2] Assessment of progress of work
[K7_U01] can obtain information from literature, databases and others sources, also in English or another foreign language recognized as the language of international communication in a given engineering discipline; is able to integrate the obtained information, interpret it, as well as draw conclusions and formulate and justify opinions.	The student is able to obtain information from literature, databases and other sources, also in English.	[SU4] Assessment of ability to use methods and tools

Subject contents	Introduction. Game examples. Nominal form games and dominated strategies. Nash equilibrium. Equilibrium in mixed strategies. Extensive character of the game. Repeated games. Evolution Games. Cooperative games. Elements of game learning theory.
Prerequisites and co-requisites	
Assessment methods and criteria	

Subject passing criteria	Passing threshold	Percentage of the final grade
Laborartory classes	100.0%	50.0%
Final test	51.0%	50.0%

Recommended reading	Basic literature	1. T. Płatkowski, Wstęp do Teorii Gier, Uniwersytet Warszawski, 2012. 2. M. Malawski, A. Wieczorek, H. Sosnowska. Konkurencja i kooperacja. Teoria gier w ekonomii i naukach społecznych. Wydawnictwo Naukowe PWN, 1997. 3. M. Ramsza. Elementy modelowania ekonomicznego opartego na teorii uczenia się w grach populacyjnych. Oficyna Wydawnicza SGH Warszawa, 2010. 4. R. Laraki, J. Renault, S.Sorin, Teoria Gier. Podstway matematyczne, Wydawnictwo Naukowe PWN
	Supplementary literature	1. P.D. Straffin, Teoria gier. Warszawa: Wydawnictwo Naukowe Scholar, 2004. 2. K. Binmore, Teoria gier, Wydawnictwo Uniwersytetu Łódzkiego 3. P. Kilber, Wprowadzenie do teorii gier, Uniwersytet Ekonomiczny w Poznaniu
	eResources addresses	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed	1. Classical economic approaches in game theory 2. Application of game theory in management 3. Player added value	
Work placement	Not applicable	