GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	, PG_00069815		
Field of study	Planowanie inteligentnych systemów transporu		
Date of commencement of studies	February 2025	Academic year of realisation of subject	2025/2026
Education level	second-cycle studies	Subject group	
Mode of study	Full-time studies	Mode of delivery	at the university
Year of study	1	Language of instruction	Polish
Semester of study	2	ECTS credits	2.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Transportation Engineering -> Faculty of Civil and Environmental Engineering -> Faculties of Gdańsk University of Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Jacek Oskarbski	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	15.0	15.0	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	0.0	0.0	30

Subject objectives

Acquiring knowledge in the field of Intelligent Transportation Systems service planning.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K7_U05] cooperates with other people in the implementation of team work, both as a leader and a team member, effectively achieving set goals	The student can effectively work with others in a team to carry out projects related to ITS planning, taking on different roles (leader and member), and can apply the knowledge they've gained to solve practical problems, achieving the set goals.	[SU5] Ocena umiejętności zaprezentowania wyników realizacji zadania [SU4] Ocena umiejętności korzystania z metod i narzędzi [SU3] Ocena umiejętności wykorzystania wiedzy uzyskanej w ramach przedmiotu [SU2] Ocena umiejętności analizy informacji [SU1] Ocena realizacji zadania
[K7_W01] identifies in an in-depth way phenomena related to the field of study as well as theories describing them and possible methods of analyzing processes occurring in the life cycle of technical systems	The student is able to identify and analyze phenomena related to ITS systems, using appropriate theories and methods of analyzing processes in the life cycle of systems, which allows for solving complex problems and making informed decisions.	[SW3] Ocena wiedzy zawartej w opracowaniu tekstowym i projektowym [SW2] Ocena wiedzy zawartej w prezentacji [SW1] Ocena wiedzy faktograficznej
[K7_K01] recognizes the importance of knowledge related to the field of study in solving cognitive and practical problems	The student is able to apply the acquired knowledge in the field of ITS service planning to solve real-life problems related to sustainable development and the efficiency of transport systems, demonstrating its importance in both cognitive and practical contexts.	[SK1] Ocena umiejętności pracy w grupie [SK5] Ocena umiejętności rozwiązywania problemów występujących w praktyce [SK4] Ocena umiejętności komunikacji, w tym poprawności językowej [SK3] Ocena umiejętności organizacji pracy [SK2] Ocena postępów pracy

Subject contents	Course content – lecture Definitions, history of the creation and development of ITS. Role and objectives of ITS application. Conditions for ITS implementation. ITS planning process, ITS system architecture. ITS services. Functional structure. Physical structure taking into account equipment and devices. Logical structure. Organizational structure taking into account links between institutions and transport elements, as well as communications. Testing the effectiveness of ITS services. Course content – exercises ITS architecture design. Planning an ITS system in a selected area of the street layout.
Prerequisites and co-requisites	

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Passing the lecture	60.0%	50.0%
Passing the exercises	100.0%	50.0%

Recommended reading

Basic literature	Lawrence A. Klein, Sensor technologies and Data requirements for ITS. Boston : Artech House, ©2001. Artech House ITS library. ISBN: 158053077X 9781580530774 Thill Jean-Claude, Geographical Information Systems in Transportation Research, Pergamon, 2000. J.M. Sussman, Perspectives on Intelligent Transportation Systems (ITS), Springer, 2005 M.A. Chowdhury and A. Sadek, Fundamentals of Intelligent Transportation Systems Planning, Artech House, 2003 ITS Hand Book 2000: Recommendations for World Road Association (PIARC) by Kan Paul Chen, John Miles
Supplementary literature	Websites and journals: IEEE TRANSACTIONS ON INTELLIGENT TRANSPORTATION SYSTEMS, IEEE TRANPORTATION RESEARCH, PART C: EMERGING TECHNOLOGIES, PERGAMON-ELSEVIER SCIENCE LTD JOURNAL OF INTELLIGENT TRANSPORTATION SYSTEMS, TAYLOR & FRANCIS INC INTERNATIONAL JOURNAL OF VEHICLE INFORMATION AND COMMUNICATION SYSTEMS, INDERSCIENCE ENTERPRISES IEEE TRANSACTIONS ON VEHICULAR TECHNOLOGY, IEEE http://frame-online.eu/ https://www.its.dot.gov/research_archives/arch/architecture_plan.htm https://local.iteris.com/arc-it/index.html
eResources addresses	

Example issues/ example questions/ tasks being completed	ITS architecture for a selected group of services. Characteristics of a hierarchical traffic management structure using ITS. Objectives of Intelligent Transport Systems. Logical structure of a road incident management system. Advantages and disadvantages of homogeneous and heterogeneous structures of advanced traffic management systems. Logical structure of the traffic management module on inter-junction sections, modes of operation.
Practical activites within the subject	Not applicable

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