



Subject card

Subject name and code	TRANSPORT SYSTEMS PLANNING, PG_00040994						
Field of study	Transport						
Date of commencement of studies	February 2023	Academic year of realisation of subject			2023/2024		
Education level	second-cycle studies	Subject group			Obligatory subject group in the field of study Subject group related to scientific research in the field of study		
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			4.0		
Learning profile	general academic profile	Assessment form			exam		
Conducting unit	Department of Transportation Engineering -> Faculty of Civil and Environmental Engineering						
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Krystian Birr					
	Teachers	dr inż. Krystian Birr dr inż. Michał Urbaniak					
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	15.0	15.0	0.0	0.0	60
	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	60		15.0		25.0	100
Subject objectives	to explain what is transport planning, transport planning regulations, processes, methods nad computer programs						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[K7_U09] able to develop the basic assumptions to an urban transport policy and transport plan for a city or region	The student knows the assumptions and structures of planning documents. Is able to develop assumptions regarding transport policy or transport plan for a city or region.	[SU4] Assessment of ability to use methods and tools
	[K7_W09] has basic knowledge of modelling of trips and vehicle traffic, traffic and transport forecasts adapted to the specific needs of city and region	Knows the essence and procedures of making traffic forecasts using traffic simulation tools.	[SW1] Assessment of factual knowledge
	[K7_U10] able to develop a transport system concept for a city and region, apply basic rules of urban transport system development, identify the requirements and parameters of transport means and systems whilst complying with environmental safety and protection requirements	student can design plans and projects of transport networks and interchanges	[SU4] Assessment of ability to use methods and tools
	[K7_U08] able to diagnose the operation of a transport system, it's facilities, processes and services, identify necessary improvements to the transport system, apply basic traffic modelling to forecast passenger and freight transport	student can do diagnose of transport system	[SU4] Assessment of ability to use methods and tools
[K7_W08] has broad knowledge of transport systems, construction and planning of transport networks and transport system integration	student knows methods of transport systems integration	[SW1] Assessment of factual knowledge	
Subject contents	LECTURES The objectives and the role of transport planning. Expected outcomes of transport planning. Basic relationships between transport and land use (interaction, means of transport, functional classifications). Sustainable development in transport. Planning levels (national, regional, corridor, local, etc.). Transport policy, its objectives and priorities. Contemporary directions and principles of transportation planning (including intermodal transport integration, integration with land use planning, integration with other spheres of planning.) Assessment of transport needs in short and long term planning. Planning assessment of mobility, security, capacity, environmental impact. A comprehensive study of transport behavior. Analyses of transport data (displacement, mobility, distribution of traffic, transportation demands, availability). Travel forecasts (models generation, spatial distribution, traffic distribution, network capacity). Planning of the transport system to achieve short-and long-term objectives. The stages of the development plan for transport infrastructure. Technical concepts of the development of transport networks. Planning the integrated transport points. Concepts and methodologies of evaluation of options (capacity, safety and impact on the environment, economic efficiency and financial viability). Strategies to mitigate transportation problems (mobility management, security management, software improvements, the application of ITS). Planning the development of automobile roads, rail and inland waterways. Planning the development of infrastructure of maritime and air transport. Urban transport planning. Public participation and partnership in the planning of transport networks. EXERCISES Selected calculations for planned transport network evaluation LABORATORY Traffic modeling with VISSUM		
Prerequisites and co-requisites	no requirements		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Written exam	50.0%	50.0%
	exercises	100.0%	25.0%
	project	100.0%	25.0%

Recommended reading	Basic literature	<p>1. K. Wojewódzka Król, R. Rolbiecki: Infrastruktura transportu. Wydawnictwo UG, Gdańsk 2008.</p> <p>2. J. Neider: Transport międzynarodowy. PWE, Warszawa 2008.</p> <p>3. Współczesne technologie transportowe. L. Mindur (red.). Radom 2004.</p> <p>4. K. Chwesiuk, B. Wiśnicki, I. Kotowska: Perspektywy rozwoju przewozów intermodalnych w Polsce. Wydawnictwo Akademii Morskiej w Szczecinie, Szczecin 2008.</p> <p>5. Jacyna M.: Modelowanie i ocena systemów transportowych, Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa 2009.</p> <p>6. Jacyna M. (red.): Kształtowanie systemów w wybranych obszarach transportu i logistyki, Wydawnictwo Politechniki Warszawskiej, Warszawa 2014.</p>
	Supplementary literature	<p>1. Zintegrowane łańcuchy transportu. I. Semenov (red.). Difin, Warszawa</p> <p>2. M. Madeyski, E. Lissowska, W. Morawski: Transport rozwój i integracja. WKiŁ, Warszawa 1987.</p> <p>3. J. Wesołowski, A. Zalewski: Integracja transportu szynowego w śródmieściu Łodzi. Warszawa 2009</p>
	eResources addresses	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	