



Subject card

Subject name and code	, PG_00069265						
Field of study	Civil Engineering						
Date of commencement of studies	October 2023		Academic year of realisation of subject		2026/2027		
Education level	first-cycle studies		Subject group				
Mode of study	Full-time studies		Mode of delivery		at the university		
Year of study	4		Language of instruction		Polish		
Semester of study	7		ECTS credits		3.0		
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 inż. Joanna Wachnicka				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	15.0	15.0	0.0	45
	E-learning hours included: 0.0						
	eNauczanie source address: https://enauczanie.pg.edu.pl/moodle/course/view.php?id=19754						
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		3.0		27.0	75
Subject objectives	he aim of the course is to familiarize students with the description and operation of the system, the system man - vehicle - road - traffic - environment (CPDRO), a description of the main factors affecting the occurrence of road traffic, and review of traffic management methods. On this basis, the student should apply selected methods of traffic management and road facilities design elements with regard to efficiency, economic efficiency, safety and environmental requirements.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[K6_W07] Understand the investment's impact on the environment and the interrelationships and dependencies between the building structure and the natural environment	The student is able to analyze the impact of planned road investments and changes in traffic organization on the environment and propose solutions to minimize negative impacts.	[SW2] Assessment of knowledge contained in presentation
	[K6_U07] Design and build engineering structures in a sustainable manner, with care for the natural environment and a minimum carbon footprint	Students design sustainable traffic organization and infrastructure solutions, taking into account the minimization of negative environmental impact, reduction of pollutant emissions, and reduction of the carbon footprint of road investments.	[SU3] Assessment of ability to use knowledge gained from the subject [SU4] Assessment of ability to use methods and tools [SU5] Assessment of ability to present the results of task
	[K6_W06] Demonstrates practical knowledge and understanding of materials, devices and tools, processes and technologies in the field of civil engineering (and their limitations).	The student has practical knowledge of materials, equipment, and technologies used in traffic engineering, including the construction and maintenance of road infrastructure elements and traffic management systems, and understands their technical and operational limitations.	[SW3] Assessment of knowledge contained in written work and projects
	[K6_U06] Conduct engineering activities in civil engineering subject area, using and applying practical knowledge and understanding of materials, equipment and tools, processes and technologies.	The student is able to carry out engineering activities in the field of design, organization, and maintenance of road traffic, using practical knowledge of materials, equipment, and technologies used in road infrastructure, taking into account their properties, limitations, and principles of safe and effective use.	[SU4] Assessment of ability to use methods and tools [SU2] Assessment of ability to analyse information [SU1] Assessment of task fulfilment [SU3] Assessment of ability to use knowledge gained from the subject [SU5] Assessment of ability to present the results of task
	[K6_K01] Is aware of the key aspects of professional, ethical and social responsibility related to management, business operation, decision making and opinion formulation in civil engineering.	The student knows the principles of professional ethics and responsibility of an engineer in the field of traffic engineering, is able to assess the technical and organizational consequences of decisions from the point of view of safety, quality of life, and social welfare, and demonstrates awareness of the ethical and social consequences of engineering activities, guided by the principles of responsibility.	[SK5] Assessment of ability to solve problems that arise in practice
Subject contents	Course content – lecture Traffic engineering. CPD system. Road users humans as subjects in traffic. Vehicles and their traffic conditions. Vehicle maneuvers. Vehicle traffic mechanics. Basics of dynamics modeling and vehicle traffic analysis. Road and surroundings. Road and traffic factors, climatic and meteorological factors. Traffic characteristics and parameters. Traffic research, measurements, and analysis. Traffic modeling. The role of traffic intensity and speed as basic traffic parameters. Intersection capacity. Road and street section capacity. Traffic organization methods. Traffic organization measures. Traffic lights. Traffic safety measures. Basics of traffic control.		
	Course content – laboratory Methods for calculating the capacity of roundabouts, regular intersections, and intersections with traffic lights.		
	Course content – project Traffic organization design at the intersection. Traffic light design at the intersection.		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Lecture	60.0%	60.0%
	Project	90.0%	20.0%
	Laboratory	90.0%	20.0%
Recommended reading	Basic literature	Gaca S., Suchorzewski W., Tracz M.: Inżynieria Ruchu Drogowego WKŁ 2008	

	Supplementary literature	Jamroz K. i inni.: Systemy sterowania ruchem ulicznym. WKŁ, 1984 r.Krystek R. i inni.: Komputerowe systemy sterowania ruchem ulicznym i drogowym. Przykłady zastosowań. WKŁ 1984 Leśko M., Guzik J.: Sterowanie ruchem drogowym. WPS, 2000. Malarski M.: Inżynieria Ruchu Lotniczego OWPW, 2005 Czasopisma: Transport Miejski i Regionalny, Traffic Engineering & Control, Przegląd ITS, Autostrady
	eResources addresses	
Example issues/ example questions/ tasks being completed		
Practical activities within the subject	Not applicable	

Document generated electronically. Does not require a seal or signature.