GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Transportation Safety, PG_00045924		
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	3.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Transportation Engineering -> Faculty of Civil and Environmental Engineering		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Kazimierz Jamroz	
	Teachers	dr hab. inż. Kazimierz Jamroz mgr inż. Patrycja Jerzyło dr inż. Sławomir Grulkowski dr inż. Jacek Szmagliński dr inż. Joanna Wachnicka dr inż. Wojciech Kustra	

Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	15.0	0.0	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	5.0	25.0	75

Subject objectives	The aim of the course is to familiarize students with the theoretical foundations and practical implementation of transport safety, with particular emphasis on risk-based methods. Familiarizing students with the process of preparing transport safety plans and examples of practical activities implementing activities and the results of their effectiveness. . On this basis, students should prepare in teams draft transport safety plans in selected areas with the use of modern methods and tools.

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[K7_W07] has broad knowledge of the reliability and safety of transport systems and transport-related environmental protection	The student has in-depth knowledge of the basics of transport safety and transport safety management. He knows the tools for transport safety management (programming at the national level, management procedure). He can apply the methods of risk management in transport. He can develop a program of transport safety at the regional and local level. He knows the road infrastructure safety management procedures: road safety audit and road safety inspection. He knows the theories and models used in transport safety and methods of forecasting safety measures. Can assess the impact of the planned road on traffic safety in the network of cooperating roads and develop a classification of dangerous sections. Familiarization with practical examples of activities for the safety of road, rail, collective, water and air transport.	[SW3] Assessment of knowledge contained in written work and projects
	[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	The student is able to create a program to improve transport safety in a selected area (country, province, city district). Applies world-tested procedures for creating such programs, including: development of a diagnosis and conditions for program implementation, selecting a vision and strategy, as well as strategic goals for the next decade. Proposing directions of strategic activities, a set of activities and tasks along with a schedule, cost estimate and implementation and monitoring rules. In the study, he uses modern methods of forecasting, estimating and analyzing selected specific issues. It presents the results in the form of a report using the GPS platform and graphic tools.	[SU5] Assessment of ability to present the results of task [SU1] Assessment of task fulfilment [SU4] Assessment of ability to use methods and tools
	[K7_K02] understands the need to formulate and communicate to the public information and opinions on the achievements of transport engineering; is aware of the importance of and understands non-technical aspects and consequences of engineering; takes steps to communicate such information and opinions in a comprehensible manner and present different points of view	The student understands the importance of safety in the functioning of the transport system and uses methods of communicating about safety to traffic participants and the public. He pays attention to recognizing the mechanisms of the influence of individual elements of the transport system on transport hazards, with particular emphasis on the role of operators (drivers, tram drivers, pedestrians) of means of transport. Is able to conduct analyzes and assessments of multi-variant solutions, the documented results of which are presented in a way that is understandable and accessible to recipients.	[SK4] Assessment of communication skills, including language correctness [SK1] Assessment of group work skills

Subject contents	LECTURES: Fundamentals of transport safety, basic problems of transport safety. Transport safety management. Transport safety management tools (programming at the national level, management procedure). Risk management in transport. Programming of transport safety at the regional and local level. Road safety audit and road safety inspection Theories and models used in transport safety, forecasting safety measures. Assessment of the impact of the planned road on traffic safety in the network of cooperating roads and the classification of dangerous sections. Practical examples of activities for transport safety. Rail transport safety. Public transport security. Safety of water transport. Air transport safety. Safety management in road and rail tunnels.PROJECT: Development of a draft transport safety program in a selected area of the country, province, district or city. The project includes the diagnosis of the state and the safety system, identification of external and internal conditions. Adoption of the vision and strategic goals of transport security for the next decade. Adoption of directions of strategic activities and tasks implementing them. Development of an implementation plan for activities, estimation of the costs and anticipated effects of the program together with the monitoring system.
Prerequisites and co-requisites	

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
lectures	50.0%	50.0%
exercises	50.0%	50.0%

Recommended reading

Basic literature	[1]. Krystek R. and others: Integrated Transport Safety System. WKŁ Warsaw 2010/2011[2]. Jamroz K .: Risk assessment method in road engineering. Publishing House of the Gdańsk University of Technology 2011.[3]. Wicher J .: Safety of cars and road traffic. WKŁ Warsaw 2002[4]. Chruzik K .: Safety engineering in transport. Publishing House of the Silesian University of Technology 2016.[5]. GucmaL .: Sea Risk Management Guidelines. WNAM Szczecin 2009.[6]. Skorupski J .: Air traffic safety dimensioning methods. PW Publishing House 2008.[7]. Łuczak K .: Safety management in civil aviation. University of Silesia 2016[8] European Parliament and Council of Europe, Directive 2008/96 / EC on road infrastructure safety management, 2008.[9] Sejm of the Republic of Poland, Act on April 13, 2012, amending the act on public roads and some other acts, 2012.[10] BudzyńskiM., GacaS., JamrozK., MichalskiL., Instruction on the control of road safety, 2013. [11] BudzyńskiM., JamrozK., KustraW., GacaS., MichalskiL., Instruction on the classification of dangerous sections on national roads - Report for GDDKiA, 2013.[12] BudzyńskiM., JamrozK., KustraW., MichalskiL., Toolsforroadinfrastrukturesafetymanagement-Polishexpiriences, Transp.Res.Procedia.3 (2014) 15.[13] JamrozK., Methods of risk management in road engineering, Gdańsk University of Technology, 2011.[14] JamrozK., KustraW., GobisA., GajewskiD., The method of assessing the risk of the basic street network in the example of Warsaw, TransportMiejski andRegi0nalny4 (2015).[15] JamrozK., KustraW., RomanowskaM., Atlas of national roads in Poland, 2006-2008, 2008.[16] JamrozK., MichalskiL., Systematic of tools for safety and road infrastructure safety management, Drogownictwo.4 (2012) 144152.[17] Regulation of the Minister of Infrastructure and Development on the classification of road sections, 2015.
Supplementary literature	Technical journals1. Road Safety Road Safety - ITS Warsaw Publisher2. City and Regional Transport -SITK3.Roadway -SITK
eResources addresses	Adresy na platformie eNauczanie:

Example issues/ example questions/ tasks being completed	1) Explain the concepts of: security, general security, personal security, nominal and real security, subjective and objective security?2) Characterize the transport safety system and its components.3) Describe the basic theories used to describe transport safety.4) Give examples of models used to describe air accidents and hazards on the road network.5) Present a typical transportation safety program layout for an area, region, or city.6) Present the most important visions of the development of transport safety.7) Describe the basic elements of the road infrastructure safety management system.8) Introduce the characteristic elements of rail, air and water transport safety management.
Work placement	Not applicable