



Subject card

Subject name and code	FUNDAMENTALS OF AIR TRANSPORT SYSTEMS, PG_00044605						
Field of study	Transport						
Date of commencement of studies	October 2022		Academic year of realisation of subject		2023/2024		
Education level	first-cycle studies		Subject group		Obligatory subject group in the field of study		
Mode of study	Full-time studies		Mode of delivery		at the university		
Year of study	2		Language of instruction		Polish		
Semester of study	4		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. Marek Pszczoła				
	Teachers						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	0.0	15.0	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	Obtaining knowledge in the field of air transport systems, design of airport components, air traffic organization, air traffic engineering and air traffic management.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_W12] has basic knowledge of the design and construction of transport infrastructure		Student assesses elements airport infrastructure. Compare airport systems used on around the world. defines pavement structures airport. Understands processes and knows the organization of air transport management.		[SW3] Assessment of knowledge contained in written work and projects		
	[K6_W09] has basic knowledge of transport traffic engineering to understand its importance for transport operation and differentiate between how it is applied in different modes of transport		Has basic knowledge in the field of air traffic engineering for understanding the functioning of air transport.		[SW2] Assessment of knowledge contained in presentation		
	[K6_W08] understands the theoretical basis of transport processes and systems which is useful for understanding the general transport structures and transport chains		The student understands the processes related to air transport.		[SW2] Assessment of knowledge contained in presentation		
	[K6_U04] able to use transport terms properly and speak about a problem using modern audiovisual techniques		The student is able to correctly use the concepts related to air transport. Is able to speak clearly on a topic related to air transport systems using modern audiovisual techniques.		[SU4] Assessment of ability to use methods and tools [SU5] Assessment of ability to present the results of task		

Subject contents	Aviation infrastructure. Airports. Landing site. Airways. Objects. Linkaviation infrastructure with urban infrastructure. Air traffic engineering. Motion control and controlair. Flight safety. Air traffic control and management. Directions of transport developmentair. Airport pavement loads. Materials for pavement construction.		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Written test passing the lecture	60.0%	60.0%
	Project	100.0%	40.0%
Recommended reading	Basic literature	Prawo lotnicze 2020. Malarski M., Inżynieria ruchu lotniczego, OWPW 2006. Aerodrome Design Manual, Part 1 Runways, 3rd Edition 2006, ICAO Aerodrome Design Manual, Part 2 Taxiways, Aprons and Holding Bays, 3rd Edition 2006, ICAO Aerodrome Design Manual, Part 3 Pavements, 2nd Edition 1983, ICAO Aerodrome Design Manual, Part 9 Airport Maintenance Practices, 1st Edition 1984, ICAO Horonjeff R., McKelvey F., Sproule W.J., Young S.B. Planning&Design of Airports, Fifth Edition, 2010	
	Supplementary literature	Prawo lotnicze 2020. Malarski M., Inżynieria ruchu lotniczego, OWPW 2006.	
	eResources addresses	Adresy na platformie eNauczanie: Podstawy Systemów Transportu Powietrznego - 2023_2024 - Moodle ID: 9767 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=9767	
Example issues/ example questions/ tasks being completed	PSTP issues - 2020/2021 summer semester:Explain the concepts of airport codes:a) Airport code according to ICAO,b) IATA airport code. Draw a diagram and approximate location of all elements present at the airport (runways, taxiways, aprons, terminal, etc.). Explain the concepts: runway, runway strip, runway threshold, ICAO airport reference code, internal horizontal surface (for determining obstacles at the airport), landing approach surface. Describe what type of aircraft (with which dimensions) can perform regular flight operations at airports with different ICAO reference codes (without specifying a specific model). What is the take-off reference length? Provide and describe what design factors affect the direction of the runway. What functions should taxiways perform? Name and briefly describe the concepts of organizing an airport board. What is it, what is it for and what is the structure and functions of the ILS. 10. Horizontal and vertical marking of runways, taxiways and aprons. 11. Air traffic control systems - traffic control tower. 12. For what purpose and how is the characteristic number marked as a horizontal marking on the threshold of DS being determined? 13. What does VASI mean and what does PAPI mean? 14. What are the basic functions of an airport pavement?What measures are used at airports to combat black ice in winter?What are the basic assumptions of the ICE ALERT system at airports?What do the abbreviations ACN and PCN mean? If the following information is in the runway description for the pilot: PCN 62 / F / B / W / T, what does it mean? Security systems used at airports.		
Work placement	Not applicable		

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