



## Subject card

Subject name and code	FUNDAMENTALS OF AIR TRANSPORT SYSTEMS, PG_00044605						
Field of study	Transport						
Date of commencement of studies	October 2026	Academic year of realisation of subject			2026/2027		
Education level	first-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 -> Faculties of Gdańsk University of Technology						
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Marek Pszczoła					
	Teachers						
Lesson types	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		
Subject contents	Course content – lecture  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		
	Project		100.0%		40.0%		
	Written test passing the lecture		60.0%		60.0%		

Recommended reading	Basic literature	<p>Prawo lotnicze 2020.</p> <p>Malarski M., Inżynieria ruchu lotniczego, OWPW 2006.</p> <p>Aerodrome Design Manual, Part 1 Runways, 3rd Edition 2006, ICAO</p> <p>Aerodrome Design Manual, Part 2 Taxiways, Aprons and Holding Bays, 3rd Edition 2006, ICAO</p> <p>Aerodrome Design Manual, Part 3 Pavements, 2nd Edition 1983, ICAO</p> <p>Aerodrome Design Manual, Part 9 Airport Maintenance Practices, 1st Edition 1984, ICAO</p> <p>Horonjeff R., McKelvey F., Sproule W.J., Young S.B. Planning&amp;Design of Airports, Fifth Edition, 2010</p>
	Supplementary literature	<p>Prawo lotnicze 2020.</p> <p>Malarski M., Inżynieria ruchu lotniczego, OWPW 2006.</p>
	eResources addresses	
Example issues/ example questions/ tasks being completed	<p>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.</p>	
Practical activities within the subject	Not applicable	

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