

<b>STUDY MODULE DESCRIPTION FORM</b>		
Name of the module/subject <b>Air transport means</b>		Code <b>1010601161010623812</b>
Field of study <b>Aerospace Engineering</b>	Profile of study (general academic, practical) <b>general academic</b>	Year /Semester <b>3 / 6</b>
Elective path/specialty <b>Aircraft Transport</b>	Subject offered in: <b>Polish</b>	Course (compulsory, elective) <b>obligatory</b>
Cycle of study: <b>First-cycle studies</b>	Form of study (full-time, part-time) <b>full-time</b>	
No. of hours Lecture: <b>2</b> Classes: <b>1</b> Laboratory: <b>-</b> Project/seminars: <b>-</b>		No. of credits <b>4</b>
Status of the course in the study program (Basic, major, other) <b>major</b>		(university-wide, from another field) <b>from field</b>
Education areas and fields of science and art <b>technical sciences</b> <b>Technical sciences</b>		ECTS distribution (number and %) <b>4 100%</b> <b>4 100%</b>
<b>Responsible for subject / lecturer:</b> dr hab. inż. Jarosław Markowski, prof. nadzw. email: jaroslaw.markowski@put.poznan.pl tel. 61 647 5992 Transport Engineering ul. Piotrowo 3, 60-965 Poznań		<b>Responsible for subject / lecturer:</b> mgr inż. Damian Olejniczak email: damian.olejniczak@put.poznan.pl tel. 61 647 5992 Transport Engineering ul. Piotrowo 3, 60-965 Poznań
<b>Prerequisites in terms of knowledge, skills and social competencies:</b>		
1	<b>Knowledge</b>	Basic knowledge of physics, mathematics, geography
2	<b>Skills</b>	Can analyze interrelations between the effects and causes of phenomena and events resulting from the laws of physics.
3	<b>Social competencies</b>	Prepared for teamwork
<b>Assumptions and objectives of the course:</b> Introduced to the division of air transport means. Airports, passenger and cargo ports, air traffic and terrestrial infrastructure, aircraft and their parameterization, purpose and use. Ideas of integration of means of air transport into the transport system, their social, economic and environmental conditions.		
<b>Study outcomes and reference to the educational results for a field of study</b>		
<b>Knowledge:</b> 1. has detailed knowledge related to selected issues in the field of the most important phenomena occurring in the Earth's atmosphere, the possibilities of their prediction, recognition, testing, as well as limiting the negative impact of human activity on the surrounding environment - [[T1A_W02]] 2. has basic knowledge about the life cycle of devices, facilities and technical systems, as well as the methods of their technical description - [[T1A_W06]] 3. knows the general principles of creating and developing forms of individual entrepreneurship, also taking into account time management, as well as the ability to correctly self-present, using knowledge in the field of science and scientific disciplines, appropriate for aviation and astronautics - [[T1A_W11]]		
<b>Skills:</b> 1. has the ability to self-study using modern teaching tools, such as remote lectures, websites and databases, didactic programs, e-books - [[T1A_U01]] 2. can obtain information from literature, the Internet, databases and other sources. Is able to integrate the obtained information, interpret and draw conclusions from them and create and justify opinions - [[T1A_U01]] 3. can use the formulas and tables, technical and economic calculations using a spreadsheet and running a simple relational database - [[T1A_U05]] 4. can prepare and present a short verbal and multimedia presentation devoted to the results of an engineering task - [[T1A_U04]]		

<b>Social competencies:</b>
1. understands the need to learn throughout life; can inspire and organize the learning process of other people - [[T1A_K01]]
2. is aware of the importance and understands the non-technical aspects and effects of engineering activities, including its impact on the environment, and the related responsibility for decisions - [[T1A_K02]]
3. is able to properly define the priorities for the implementation of the task set by himself or others - [[T1A_K04]]
4. is aware of the social role of a technical university graduate, and especially understands the need to formulate and communicate to the public, in particular through mass media, information and opinions on the achievements of technology and other aspects of engineering activities; makes efforts to provide such information and opinions in a generally understandable way - [[T1A_K07]]

<b>Assessment methods of study outcomes</b>		
Final exam, colloquium and pass the exercises		
<b>Course description</b>		
Aviation structures, construction and structural features of aircraft. Rules for the use of aircraft in air transport. Prospects for the development of transport aircraft structures. The division of air transport means. Airports, passenger and cargo ports, air traffic and terrestrial infrastructure, aircraft and their parameterization, purpose and use. Ideas of integration of means of air transport into the transport system, their social, economic and environmental conditions.		
<b>Basic bibliography:</b>		
1. Błaszczak J., Wprowadzenie w technikę lotniczą, WAT, Warszawa 1982		
2. Cheda W., Malski M., Techniczny poradnik lotniczy. Płatowce, WKŁ, Warszawa 1981		
3. Dzierżanowski P., Turbinowe silniki śmigłowe i śmigłowcowe, WKŁ, Warszawa 1985		
4. Gotowała J. Lotnictwo XXI wieku. AON, Warszawa 2002		
5. Karpowicz J., Współczesne konstrukcje lotnicze, AON, Warszawa 2003		
6. Lewitowicz J., Podstawy eksploatacji statków powietrznych. Tom I, ITWL, Warszawa 2001		
<b>Additional bibliography:</b>		
1. Pilecki S., Lotnictwo i kosmonautyka, WKŁ, Warszawa 1984.		
2. Szczeciński S., Ilustrowany leksykon lotniczy. Technika lotnicza, WKŁ, Warszawa 1988.		
<b>Result of average student's workload</b>		
<b>Activity</b>	<b>Time (working hours)</b>	
1. Preparation for the lecture	1	
2. Participation in the lecture	30	
3. Preserving the content of the lecture	5	
4. Consultations related to the lecture	5	
5. Preparation for the exam	10	
6. Participation in the exam	1	
7. Preparation for exercises	7	
8. Participation in exercises	15	
9. Consultations	10	
10. Preparation for passing	10	
11. Participation in the pass	1	
<b>Student's workload</b>		
<b>Source of workload</b>	<b>hours</b>	<b>ECTS</b>
Total workload	95	4
Contact hours	62	3
Practical activities	15	1