

<b>STUDY MODULE DESCRIPTION FORM</b>		
Name of the module/subject <b>Safety Engineering in Air Transport</b>		Code <b>1010621251010623814</b>
Field of study <b>Transport</b>	Profile of study (general academic, practical) <b>(brak)</b>	Year /Semester <b>3 / 5</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>1</b> Classes: <b>-</b> Laboratory: <b>-</b> Project/seminars: <b>-</b>		No. of credits <b>2</b>
Status of the course in the study program (Basic, major, other) <b>(brak)</b>		(university-wide, from another field) <b>(brak)</b>
Education areas and fields of science and art <b>technical sciences</b>		ECTS distribution (number and %) <b>2 100%</b>
<b>Responsible for subject / lecturer:</b>  dr inż. Adrian Gill email: adrian.gill@put.poznan.pl tel. (061) 665-2017 Faculty of Working Machines and Transportation ul. Piotrowo 3; 60-965 Poznań		
<b>Prerequisites in terms of knowledge, skills and social competencies:</b>		
1	<b>Knowledge</b>	Basic knowledge of safety in transport
2	<b>Skills</b>	Can apply the scientific method to solve research problems
3	<b>Social competencies</b>	It can precisely formulated questions; able to prioritize important in solving the tasks posed in front of him, show independence in solving problems, acquire and improve their knowledge and skills
<b>Assumptions and objectives of the course:</b> Learning the methods and practical skills to solve problems in the management of safety in air transport		
<b>Study outcomes and reference to the educational results for a field of study</b>		
<b>Knowledge:</b> 1. Has the general and detailed knowledge of the risk assessment procedures and the human reliability analysis in air transport. - [K1A_W22]		
<b>Skills:</b> 1. Is able to communicate using a variety of techniques in a professional environment and other environments using the formal record of the design, technical drawings, concepts and definitions in the scope of the study area - [K1A_U02] 2. Has the preparation required in industrial environment in scope of risk analysis - [K1A_U08] 3. Is able to obtain information from the literature, internet, databases and other sources. Can integrate the information to interpret and draw conclusions from them - [K1A_U01]		
<b>Social competencies:</b> 1. Is aware of and understands the importance and impact of non-technical aspects of mechanical engineering activities and its impact on the environment and responsibility for own decisions - [K1A_K02] 2. Is able to identify and resolve the dilemmas associated with the profession, among others. problems at the technology/environment level - [K1A_K06] 3. Is aware of the transfer of knowledge to society, takes steps to ensure that the information is understandable - [K1A_K08]		
<b>Assessment methods of study outcomes</b>		
Final test, report		

<b>Course description</b>		
Introduction to risk hazards in air transport, some risk management considerations in air transport; model areas of safety assessments, risk management model. The human factor, technical factor, an environmental factor, organizational factor as a source of hazards in air transport. Selected methods of risk analysis in air transport. HRA methodology. Introduction to the modeling of safety systems. Procedures of risk treatment in transport.		
<b>Basic bibliography:</b>		
1. Analiza ryzyka w transporcie i przemyśle, pod redakcją Marka Młyńczaka, Navigator 6, Oficyna Wydawnicza Politechniki Wrocławskiej, Wrocław 1997. 2. Bezpieczeństwo pracy i ergonomia, część 1 i 2, pod redakcją Danuty Koradeckiej, Wyd. Centralnego Instytutu Ochrony Pracy, Warszawa 1999. 3. Horst W., Ryzyko zawodowe na stanowisku pracy, część 1, Ergonomiczne czynniki ryzyka. Wydawnictwo Politechniki Poznańskiej, Poznań 2004. 4. Jaźwiński J., Ważyńska-Fiok K., Bezpieczeństwo systemów. Wyd. Naukowe PWN, Warszawa, 1993. 5. Radkowski S., Podstawy bezpiecznej techniki. Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa 2003. 6. Szopa T., Niezawodność i bezpieczeństwo. Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa 2009. 7. Szymanek A., Bezpieczeństwo i ryzyko w technice. Wyd. Politechniki Radomskiej, Radom 2006. 8. Terelak J.F., Człowiek i stres. Oficyna Wydawnicza BRANTA, Bydgoszcz-Warszawa 2008 9. Zintegrowany System Bezpieczeństwem Transportu. Tom 1 i 2. Redaktor pracy zbiorowej Krystek R., Politechnika Gdańska, Gdańsk 2009, WKŁ, Warszawa 2009		
<b>Additional bibliography:</b>		
1. Najmiec A., Widerszal-Bazyl M., Stres w pracy mechaników lotniczych, Zawody trudne i niebezpieczne, Bezpieczeństwo pracy nr 11/2006 2. Obora H., Metoda analizy błędów pracownika w układzie ergonomicznym HRA, Zeszyty Naukowe Akademii Ekonomicznej w Krakowie, Wydawnictwo Akademii Ekonomicznej w Krakowie, Kraków 2004, nr 648, s. 77+89. 3. Pihowicz W., Inżynieria bezpieczeństwa technicznego. Wydawnictwa Naukowo- Techniczne, Warszawa 2008. 4. Skuza L., Co warto wiedzieć o ryzyku zawodowym. Wyd. Ośrodka Doradztwa i Doskonalenia Kadr, Gdańsk 2003.		
<b>Result of average student's workload</b>		
Activity	Time (working hours)	
1. Preparing to lectures	0	
2. Participation in the lecture	15	
3. Consolidation of lecture content	1	
4. Consultations	1	
5. Preparing to final test	6	
6. Participation in final test	2	
7. Preparation for laboratory	2	
8. Participation in laboratory	15	
9. Consolidation of training content / report	1	
10. Consultations	1	
11. Preparing to final test	5	
12. Participation in final test	1	
<b>Student's workload</b>		
Source of workload	hours	ECTS
Total workload	50	2
Contact hours	35	1
Practical activities	25	1