STUDY MODULE DESCRIPTION FORM

Name of the module/subject **Airports functioning principles**	Code **1010601151010613537**

Field of study **Aerospace Engineering**	Profile of study (general academic, practical) **general academic**	Year /Semester **3 / 5**

Elective path/specialty **Aircraft Transport**	Subject offered in: **Polish**	Course (compulsory, elective) **obligatory**

Cycle of study: **First-cycle studies**	Form of study (full-time,part-time) **full-time**

No. of hours Lecture: **1** Classes: **-** Laboratory: **1** Project/seminars: **-**	No. of credits **3**

Status of the course in the study program (Basic, major, other) **other**	(university-wide, from another field) **university-wide**

Education areas and fields of science and art **technical sciences** **Technical sciences**	ECTS distribution (number and %**)** **3 100%** **3 100%**

Responsible for subject / lecturer:

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Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	Basic knowledge in physics and geography
2	**Skills**	Is able analyze the interrelationships between the effects and causes of phenomena and events arising from the laws of physics
3	**Social competencies**	Prepared for teamwork

Assumptions and objectives of the course:

Understanding the principles of operation of airports and common problems characteristic of such complex structures. Mastering the theoretical basis of the identification, modeling and optimization of the most important airport subsystems.

Study outcomes and reference to the educational results for a field of study

Knowledge:

1. Has a basic knowledge of what to do to solve a given problem - [K1A_W14]

2. Has a basic knowledge about the movement of aircraft in the area of airports - [K2A_W24]

3. Is aware of the existing laws of physics in the field of air traffic - [K1A_W14]

Skills:

1. Is able to identify the problem in the field of air transport - [K2A_U07]

2. Is able to analyze the cause and effect of the problem and propose a solution to - [K2A_U08]

3. Is able to formulate the tasks and steps in the field of air transport - [K2A_U07]

Social competencies:

1. Understands the need for lifelong learning - [K1A_K01]

2. Is aware of the importance and understand the business impact of non-technical engineer in the field of multi-faceted impact of air transport - [K2A_K02]

Assessment methods of study outcomes

Knowledge from the scope of the theoretical part will be verified semester written work (test) while laboratory classes in each case on the basis of the report presented with the tasks.

Course description
As part of the course students will learn the fundamental principles of the functioning of airports in terms of both theoretical and practical on the example of the operation of the airport Ławica. Issues related to the development of air traffic in Poland and its impact on the development of airports and their methods of management and control will be discussed. Common operations performed in the service area of ??an airport, maintenance procedures take-offs and landings, handling of passengers and baggage and the risks associated with them will be characterized. Particular attention will be paid to the functioning of a passenger terminal and airport infrastructure and airport facilities. Students will become familiar with the methods of modeling some processes and traffic flows and tools used in issues related to airport capacity problems. As part of the laboratory will carry out a series of numerical experiments using the latest assistance systems modeling and simulation of airport processes (eg RAMS Plus recommended by the European Organisation for the Safety of Air Navigation, Eurocontrol.

Basic bibliography:

1. Aneks 14 ICAO (International Civil Aviatoin Organization) do Międzynarodowej Chicagowskiej Konwencji Lotnictwa Cywilnego

2. Zarządzanie ruchem lotniczym (PL-4444), Urząd Lotnictwa Cywilnego Warszawa 2006

3. M. Malarski, Inżynieria ruchu lotniczego, Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa 2006

4. Ludomir M. Laudański 15 wykładów aeromechaniki. Wstęp do specjalności lotniczych. Oficyna Wydawnicza Politechniki Rzeszowskiej , Wydanie II 2005

5. Basiewicz T. , Gołaszewski A., Rudziński L., Infrastruktura transportu, Oficyna Wydawnicza Politechniki Warszawskiej, 200

6. Compa T., Zarządzanie przepływem ruchu lotniczego., Dęblin, Wydawnictwo Wyższej Szkoły Szkoły Oficerskiej Sił Powietrznych 2008, Arch. 444583

Additional bibliography:

Result of average student's workload	
Activity	**Time (working hours)**
1. Preparation for lectures	4
2. Participation in lectures	15
3. Learning of lectures content	6
4. Office hours	4
5. Preparation for exam	10
6. Participation in exam	2
7. Preparation for laboratories	5
8. Participation in laboratories	15
9. Preparation of reports	10

Student's workload		
Source of workload	**hours**	**ECTS**
Total workload	71	3
Contact hours	36	1
Practical activities	30	1