



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Airport efficiency and development

### Course

Field of study

Aerospace Engineering

Area of study (specialization)

Civil Aviation

Level of study

Second-cycle studies

Form of study

full-time

Year/Semester

2/3

Profile of study

general academic

Course offered in

polish

Requirements

compulsory

### Number of hours

Lecture

15

Laboratory classes

0

Other (e.g. online)

0

Tutorials

0

Projects/seminars

15

### Number of credit points

2

### Lecturers

Responsible for the course/lecturer:

Responsible for the course/lecturer:

### Prerequisites

Knowledge: The student has a basic knowledge of air transport and the operation of airports;

Skills: The student is able to search for information in literature and to critically evaluate it, can use internet databases, books and electronic lectures, can assess the credibility of the data found;

Social competences: The student knows the rules of discussion, knows how to work in a group, can set priorities;

### Course objective

Familiarizing students with issues related to the efficiency and development of airports. Presentation and determination of the impact of the airport on the development of the region.

### Course-related learning outcomes

Knowledge

1. Has extended knowledge necessary to understand the profile subjects and specialist knowledge about the construction, methods of construction, manufacturing, operation, air traffic management, safety systems, impact on the economy, society and the environment in the field of aviation and aerospace for



selected specialties: 1. Engineering Aviation, 2. Space Engineering, 3. Civil Aviation, 4. Virtual Engineering in Aeronautics;

2. Has detailed and structured knowledge of the use of air technical facilities for the transport of passengers, goods, dangerous goods, and the management of air operations and airports;

3. Has basic knowledge of law, in particular civil aviation law, copyright and industrial property law, and its influence on the development of technology, can use patent information resources;

4. Knows the general principles of creating and developing forms of individual entrepreneurship, also taking into account time management, as well as the skills of proper self-presentation, using knowledge in the field of science and scientific disciplines relevant to aviation and cosmonautics;

#### Skills

1. Can communicate with the use of various techniques in the professional and other environments, using the formal notation of construction, technical drawing, concepts and definitions of the scope of the studied field of study;

2. Has the ability to self-educate with the use of modern didactic tools, such as remote lectures, websites and databases, teaching programs, e-books;

3. Can obtain information from literature, the Internet, databases and other sources. Is able to integrate the obtained information, interpret and draw conclusions from it, as well as create and justify opinions;

#### Social competences

1. Understands the need for lifelong learning; is able to inspire and organize the learning process of other people;

2. Is ready to critically evaluate the possessed knowledge and received content, recognize the importance of knowledge in solving cognitive and practical problems, and consult experts in the event of difficulties with solving problems on their own;

3. Can think and act in an entrepreneurial way;

#### Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Lecture: written test covering the issues discussed in class.

Project: creating your own project regarding the impact of the selected airport on the region.

#### Programme content

LECTURE:

1. The market of air transport services in the world (the concept of the market, genesis and development of the air transport services market in the world, development trends of the air transport services market, directions of development of airports)



2. The air transport services market in Poland (genesis and development of the air transport services market in Poland, development trends in the air transport services market, development directions of Polish airports)
3. Entities operating in the air transport services market: passengers, airlines, airports, handling agents)
4. Specifics of an airport as an enterprise (aviation and commercial activities, airport revenue structure, airport cost structure, long-term investment cycle at airports, economies of scale at airports, break-even point at airports, airport privatization)
5. Methods for measuring airport efficiency and their application in PRACTICE (Partial Factor Productivity (PFP), Total Factor Productivity (TFP), Stochastic Frontier Analysis (SFA), Data Envelopment Analysis (DEA)
6. Research on airport efficiency in the world (based on ratio analysis, based on the DEA method, technical efficiency research, financial efficiency research, mixed efficiency research)

**PROJECT:**

Research on the efficiency of regional airports in Poland

**Teaching methods**

Informative (conventional) lecture (providing information in a structured way) - may be of a course (introductory) or monographic (specialist) character;

Project method (individual or team implementation of a large, multi-stage cognitive or practical task, the effect of which is the creation of a work);

**Bibliography**

Basic

1. Regionalny zintegrowany plan policentrycznego rozwoju obszarów wokół Mazowieckiego Portu Lotniczego Warszawa-Modlin / [autor raportu: Marcin Nejman ; współpraca: Piotr Brzeski, Janusz Jeżak, Jakub Błachut ; tłumaczenie: Bartłomiej Matulewicz].Warszawa : Mazowieckie Biuro Planowania Regionalnego, 2016.
2. Praktyczne aspekty bezpieczeństwa w lotnictwie na przykładzie Portu Lotniczego im. Fryderyka Chopina / red. nauk. Tadeusz Compa, Jan Rajchel, Krzysztof Załęski ; Wyższa Szkoła Oficerska Sił Powietrznych. Dęblin : Wydawnictwo Wyższej Szkoły Oficerskiej Sił Powietrznych, 2012.
3. Porty lotnicze - infrastruktura, eksploatacja i zarządzanie / Michał Kozłowski. Warszawa : Oficyna Wydawnicza Politechniki Warszawskiej, 2015.

Additional

1. Zarządzanie ruchem lotniczym w przestrzeni powietrznej RP, WLOP, Warszawa 2002



2. Ustawa Prawo Lotnicze.

**Breakdown of average student's workload**

	Hours	ECTS
Total workload	55	2,0
Classes requiring direct contact with the teacher	40	1,5
Student's own work (literature studies, preparation for exam, submission of the project) <sup>1</sup>	15	0,5

<sup>1</sup> delete or add other activities as appropriate