



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Air traffic engineering

### Course

Field of study

Aviation

Area of study (specialization)

Air Traffic Management

Level of study

First-cycle studies

Form of study

full-time

Year/Semester

3/5

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

15

Projects/seminars

0

### Number of credit points

2

### Lecturers

Responsible for the course/lecturer:

Mateusz Kachlicki

Responsible for the course/lecturer:

mateusz.kachlicki@put.poznan.pl

Polskie Linie Lotnicze LOT

### Prerequisites

Knowledge: Basic knowledge of aviation

Skills: Can analyze presented data as well as regulations and legal requirements. He can implement data in new environments

Social competences: Prepared for independent work with the presentation of its effects

### Course objective

Familiarization with the issues of air traffic engineering

### Course-related learning outcomes

Knowledge

has ordered and theoretically founded general knowledge in the field of key technical issues and detailed knowledge of selected issues related to air transport, knows the basic techniques, methods and tools used in the process of solving tasks related to air transport, mainly of an engineering nature



has detailed knowledge related to selected issues in the field of manned and unmanned aircraft construction, in the field of on-board equipment, control systems, communication and recording systems, automation of individual systems, has basic knowledge of flight simulation training devices and simulation methods used to solve air transport issues

has basic knowledge of aviation law, organizations operating in civil aviation and knows the basic principles of state aviation functioning, has basic knowledge of key issues in the functioning of civil aviation

#### Skills

is able to obtain information from various sources, including literature and databases, both in Polish and in English, integrate them properly, interpret them and make a critical evaluation, draw conclusions and exhaustively justify the opinions they formulate

can, when formulating and solving tasks related to civil aviation, apply appropriately selected methods, including analytical, simulation or experimental methods

can analyze the strategies of enterprises and interpret their activities, and can use in practice the basic tools of strategic analysis

#### Social competences

is aware of the importance of knowledge in solving engineering problems and knows examples and understands the causes of faulty engineering projects that have led to serious financial and social losses, or to a serious loss of health and even life

correctly identifies and resolves dilemmas related to the profession of an aerospace engineer

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

Learning outcomes presented above are verified as follows:

Lecture - written test, classes - written test

#### Programme content

1. Introduction to the issues of air traffic
2. Flight planning in air traffic engineering - basic planning and optimization
3. Aircraft operations - types, possibilities and limitations
4. Handling of aircraft at airports - procedures for handling take-offs and landings
5. Passenger service at airports
6. Limitations in air traffic engineering - meteorological conditions, strikes, natural disasters
7. Air traffic control - slot management
8. Research of air traffic parameters and its service in the area of the airport



9. Directions of development of air traffic engineering

**Teaching methods**

Information lecture (conventional) (transmission of information in a systematic way) - can be of a course (propedeutic) or monographic (specialist) nature

Practice - excercise method

**Bibliography**

Basic

1. Piotr Kozłowski, Sumeer Chakuu, Michał Nędza: Podstawy transportu lotniczego, 2012
2. Spyra Z., Witczak O.: Czynniki wpływające na wizerunek portów lotniczych, 2017
3. Pijet-Migoń Edyta: Zmiany rynku lotniczych przewozów pasażerskich w Polsce po akcesji do Unii Europejskiej, 2012

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	50	2,0
Classes requiring direct contact with the teacher	30	1,5
Student's own work (literature studies, preparation for classes, preparation for tests,) <sup>1</sup>	20	0,5

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