



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Modern aviation and airports

### Course

Field of study

Aerospace Engineering

Area of study (specialization)

Aviation safety and management

Level of study

First-cycle studies

Form of study

full-time

Year/Semester

4/7

Profile of study

general academic

Course offered in

polish

Requirements

elective

### Number of hours

Lecture

30

Laboratory classes

0

Other (e.g. online)

0

Tutorials

0

Projects/seminars

30

### Number of credit points

5

### Lecturers

Responsible for the course/lecturer:

Marta Galant-Gołębiewska

email: [marta.galant@put.poznan.pl](mailto:marta.galant@put.poznan.pl)

tel. 61 665 2252

Faculty of Civil and Transport Engineering

ul. Piotrowo 3, 60-965 Poznan

Responsible for the course/lecturer:

Remigiusz Jasiński

email: [remigiusz.jasinski@put.poznan.pl](mailto:remigiusz.jasinski@put.poznan.pl)

tel. 61 665 2252

Wydział Inżynierii Lądowej i Transportu

ul. Piotrowo 3, 60-965 Poznań

### Prerequisites

Knowledge: Basic knowledge of the English language, understanding of basic issues related to transport logistics, basic knowledge in the field of aviation

Skills: Ability to think analytically and associate cause-effect relationships in the field of aircraft. Learning to understand

Social competences: Is prepared for teamwork. Can work in a group and understands the safety basics



### Course objective

Getting to know the basic sources of aviation law, conventions, applicable regulations. Understanding the requirements and challenges in aviation of the 21st century.

### Course-related learning outcomes

#### Knowledge

1. has basic knowledge of the main divisions of technical mechanics: statics, kinematics and dynamics of a material point and a rigid body, and strength of materials - [K1A\_W04]
2. has detailed knowledge related to selected issues in the field of manned and unmanned aerial vehicles, including on-board equipment and their main components - [K1A\_W13]
3. has detailed knowledge related to selected issues in the field of the most important phenomena occurring in the Earth's atmosphere, the possibility of their prediction, recognition, research, as well as limiting the negative impact of human activity on the surrounding environment - [[K1A\_W14]]
4. has detailed knowledge related to selected issues in the field of navigation and piloting techniques and the use of flight simulators - [[K1A\_W16]]
5. has detailed knowledge related to selected issues in the field of construction of aircraft propulsion systems and the design of their components - [K1A\_W18]

#### Skills

1. can use one additional foreign language in verbal communication at the level of everyday language, can describe in this language issues related to the field of study studied, can prepare technical descriptive and drawing documentation of an engineering, transport and / or logistics task - [[K1A\_U07]]
2. can analyze facilities and technical solutions, can search in catalogs and on manufacturers' websites ready components of machines and devices, including means and devices for transport and storage, assess their suitability for use in own technical and organizational projects - [K1A\_U09]
3. can plan and conduct a research experiment using measuring equipment, computer simulations, can perform measurements such as temperature measurements using liquid, thermistor, thermocouple thermometers, velocity and flow rate using turbine, laser and ultrasonic flow meters, interpret the results and draw conclusions - [K1A\_U19]

#### Social competences

1. understands the need for lifelong learning; can inspire and organize the learning process of other people - [[K1A\_K01]]
2. Is able to properly define priorities for the implementation of a task set by himself or others- [[K1A\_K04]]

### Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

a final test covering the material discussed



Visits to the airport and airspace management center to verify and consolidate the acquired knowledge in practice

### Programme content

1. Introduction (airport origins, key definitions, airport identification methods)
2. Airport infrastructure (structure and elements of the movement area, horizontal and vertical markings of the movement area, light and technical aids and apron lighting)
3. Terminals and ground handling (terminal classification, main elements, design principles, terminal configurations, passenger and baggage handling)
4. Polish airports and air traffic (statistics, configurations, locations)
5. Airspace in the vicinity of airports and airport navigation aids
6. Impact, airport design, location (airport pressure zone, airport profit structure, environmental regulations regarding the establishment of airports)
7. Key airports in the world - statistics, analyzes
8. Aircraft and rockets
9. Classification, competitiveness, safety in modern aviation
10. Regulations, tests and certificates, limitation of exhaust emissions and noise in modern aviation
11. Problems of contemporary airspace capacity.

### Teaching methods

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

Laboratory (experiment) method (students independently conduct experiments)

### Bibliography

Basic

1. Żylicz. M .Międzynarodowe prawo lotnicze , Lexis, Warszawa 2011
2. Compa.M . Przepustowość przestrzeni powietrznej. WLOP Dęblin 2009
3. Aneksy ICAO
4. Chakuu S., Kozłowski P., Nędza M.: Podstawy transportu lotniczego, Konsorcjum Akademickie, Kraków, Rzeszów, Zamość 2012
5. Nita S. Projektowanie lotnisk i portów lotniczych, 2014



6. Kozłowski M., Porty lotnicze - infrastruktura, eksploatacja i zarządzanie, Warszawa, 2015

Additional

1. Materiały szkoleniowe, wewnętrzne Polskiej Agencji Żeglugi Powietrznej
2. Rydzkowski W., Wojewódzka-Król K. (red.): Transport. PWN, Warszawa 1998

**Breakdown of average student's workload**

	Hours	ECTS
Total workload	130	5,0
Classes requiring direct contact with the teacher	70	3,0
Student's own work (literature studies, preparation for laboratory classes, preparation for the exam <sup>1</sup> )	60	2,0

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