



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Carriage planning in CAT

### 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

1/1

Profile of study

general academic

Course offered in

polish

Requirements

compulsory

### Number of hours

Lecture

30

Laboratory classes

0

Other (e.g. online)

0

Tutorials

1

Projects/seminars

0

### Number of credit points

3

### Lecturers

Responsible for the course/lecturer:

dr inż. Anna Kobaszyńska - Twardowska

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Wydział Inżynierii Lądowej i Transportu

ul. Piotrowo 3

60-965 Poznań

Responsible for the course/lecturer:

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### Prerequisites

Knowledge: The student has a basic knowledge of air transport

Skills: The student is able to integrate the obtained information, interpret it, draw conclusions, formulate and justify opinions, the ability to perceive, associate and interpret phenomena occurring in the management of organizations

Social competences: The student is aware of the importance and understands the non-technical aspects and effects of transport activities



## Course objective

To acquaint students with the specifics of planning air transport in commercial aviation. Acquiring basic information related to the use of airspace

## Course-related learning outcomes

### Knowledge

1. Has broadened knowledge, necessary for understanding of profile subjects and specialist knowledge about construction, methods of construction, manufacturing, operation, air traffic management, security systems, impact on the economy, society and the aviation and aerospace environment for selected specialties:

1. Aeronautical Engineering
2. Space Engineering
3. Civil Aviation
4. Virtual Engineering in Aeronautics [P7S\_WG, P7S\_WK] [K2A\_W01]
2. has detailed knowledge related to selected issues in the field of ground handling of aircraft and propulsion systems, including logistic aspects [K2A\_W19] [P7S\_WG]
3. has ordered, theoretically founded general knowledge covering key issues in the field of flight safety and hazard risk assessment [K2A\_W22] [P7S\_WG]
4. has detailed and structured knowledge in the use of aviation technical facilities in the transport of persons, goods, dangerous goods, as well as in the management of aviation operations and airports [K2A\_W23] [P7S\_WG]
5. has basic knowledge in the field of law, in particular the law on civil aviation, copyright and protection of industrial property and its impact on the development of technology, can use patent information resources [K2A\_W25] [P7S\_WK]

### Skills

1. is able to communicate using various techniques in the professional environment and other environments using the formal record of the structure, technical drawing, concepts and definitions of the scope of the studied field of study [K2A\_U02] [P7S\_UK]
2. has the ability to self-study using modern teaching tools, such as remote lectures, websites and databases, didactic programs, electronic books [K2A\_U03] [P7S\_UW, P7S\_UU]
3. can obtain information from literature, the Internet, databases and other sources. Is able to integrate the obtained information, interpret and draw conclusions, and create and justify opinions [K2A\_U04] [P7S\_UW, P7S\_UU]
4. can use the formulas and tables, technical and economic calculations using a spreadsheet programming tools of own authorship, specialized software [K2A\_U05] [P7S\_UW]



5. is able to analyze objects and technical solutions, is able to search in catalogs and on manufacturers' websites ready components of machines and devices, including means and transport and storage devices, assess their suitability for use in their own technical and organizational projects [K2A\_U09] [P7S\_UW]

6. can apply basic technical standards for unification and security as well as for recycling [K2A\_U13] [P7S\_UW]

7. is able to assess the material, environmental and labor costs for the implementation of aviation modules and on-board devices [K2A\_U14] [P7S\_UW]

#### Social competences

1. understands the need to learn throughout life; can inspire and organize the learning process of other people [K2A\_K01] [P7S\_UU]

2. is ready to critically evaluate possessed knowledge and received content, recognize the importance of knowledge in solving cognitive and practical problems and consult experts in the event of difficulties in solving the problem on their own [K2A\_K 02] [P7S\_KK]

3. can think and act in an entrepreneurial way [K2A\_K 07] [P7S\_KO]

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

Learning outcomes presented above are verified as follows:

Lecture: written test (open test and questions)

Exercises: colloquium in writing

#### Programme content

Planning as an element of management

VFR flight planning

Planning of IFR flights

Preparation for flight

Fuel planning

Transport and storage of aviation fuels at military aviation bases

The duration and range of flights

Flight plans

Flight monitoring

Organization of handling



Performance analyzes for take-off and landing

Space fees

Forecasting the demand for transport

Forecasting in air transport

### Teaching methods

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

The exercise method (subject exercises, practice exercises) - in the form of auditorium exercises (application of the acquired knowledge in practice - may take various forms: solving cognitive tasks or training psychomotor skills; transforming a conscious activity into a habit through repetition)

### Bibliography

Basic

1. Malarski M., Modelowanie procesów ruchu lotniczego dla kontroli i planowania lotów, Warszawa 2002
2. Compa T., Zarządzanie przestrzenią powietrzną, AON, Warszawa 2003
3. Operacje statków powietrznych: (Doc. 8168): procedury Służb Żeglugi Powietrznej, Warszawa 2015
4. Laskowski R., Osiągi, wyważenie i planowanie lotu, Szkolenie samolotowe EASA, Żółwin, 2014
5. CAE Oxford Aviation Academy, Mass and Balance: Performance, Oxford 2018

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	74	3,0
Classes requiring direct contact with the teacher	48	2,0
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) <sup>1</sup>	17	1,0

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