COURSE DESCRIPTION CARD - SYLLABUS

Course name
Functioning of civil aviation

Course

Field of study
Aerospace Engineering

Year/Semester
2/3

Area of study (specialization)
Air Transport

Profile of study
general academic

Level of study
First-cycle studies

Course offered in
polish

Form of study
full-time

Requirements
elective

Number of hours

Lecture
45

Laboratory classes
0

Other (e.g. online)
0

Tutorials
30

Projects/seminars
0

Number of credit points

7

Lecturers

Responsible for the course/lecturer:
Marta Galant-Gołebięwska

email: 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:
Marta Maciejewska

email:
marta.r.maciejewska@doctorate.put.poznan.pl

tel.61 647 27 91

Faculty of Civil and Transport Engineering

ul. Piotrowo 3, 60-965 Poznan

Prerequisites

Knowledge: The student has a basic knowledge of air transport, safety in air transport, information about the management and organization of transport processes

Skills: The student is able to associate and integrate the obtained information, analyze the phenomena occurring in the environment, draw conclusions, formulate and justify opinions, the ability to solve research problems using scientific methods, the ability to find cause-and-effect relationships based on the acquired knowledge.

Social competences: the ability to precisely formulate questions; the ability to define important priorities in solving the tasks set for him; ability to formulate a research problem and search for its solution, independence in problem solving, ability to work in a group, ability to search for information in literature

Course objective

Getting to know the specificity of the functioning of air transport. Discussion of the structure and division of the airspace, rules of flights and institutions related to the organization of air traffic (in particular the Polish Air Navigation Services Agency). Presentation of the structure of aviation authorities in the world, Europe and Poland. Overview of major aviation organizations, their responsibilities and tasks. Overview of the Aviation Law. Presentation of the transport policy in the field of air transport. Legal aspects of the operations of airlines (handling services, airlines, airports)

Course-related learning outcomes

Knowledge

1. has extended knowledge necessary to understand the profile subjects and specialist knowledge about the construction, construction methods, manufacturing, operation, air traffic management, safety systems, economic, social and environmental impact for selected specialties: Aviation Safety and Management and Air Transport - [[K1A_W23]]

2. has basic knowledge of the history of aviation and cosmonautics, especially aircraft and space engines, more important events and characters that have contributed to the development of individual fields of science important for human development, as well as the latest trends in the construction of machines and devices - [[K1A_W21]]

3. knows the general principles of creating and developing forms of individual entrepreneurship, also taking into account time management, as well as the skills of correct self-presentation, using knowledge in the field of science and scientific disciplines relevant to aviation and astronautics - [[K1A_W26]]

4. has ordered, theoretically founded general knowledge covering key flight safety issues and risk assessment - [[K1A_W12]]

5. has basic knowledge necessary to understand social, economic, legal and other non-technical determinants of engineering activity.- [[K1A_W24]]

6. 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. - [[K1A_W25]]

Skills

1. has the ability to self-study using modern teaching tools, such as remote lectures, websites and databases, teaching programs, e-books - [[K1A_U03]]

2. is able to obtain information from literature, the Internet, databases and other sources. Is able to integrate the information obtained, interpret and draw conclusions from them as well as create and justify opinions - [[K1A_U04]]

3. is able to apply basic technical standards concerning unification and safety and recycling - [[K1A_U13]]

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]]

3. can think and act in an entrepreneurial manner - [[K1A _K06]]

4. Is aware of the social role of a technical university graduate, and especially understands the need to formulate and transmit to the society, in particular through the mass media, information and opinions on technological achievements and other aspects of engineering activities; makes efforts to provide such information and opinions in a commonly understandable manner. [[K1A _K07]]

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Lecture: written or oral exam on the content processed during the classes

Tutorials: final test - planning and calculation of basic parameters of air transport (GA), development of own flight route, preparation of a flight plan, selection of airports, aircraft, basic calculations (SP mass and balance, taking into account weather, working with an aerial map)

Programme content

1. The International Civil Aviation Organization ICAO and other aviation organizations (Eurocontrol, EASA, PANSA, CAA). Conventions organizing air navigation. Historical conditions of aviation law and the structure of its functioning.

2. Division of the Polish Airspace. Flexible Airspace Management (FUA). Airspace Use Plan (AUP). Strategic, Pre-tactical and Tactical Space Management (ASM-1, ASM-2 and ASM-3).

3. Overview of the basic rules of the air (ICAO Annex 2)? visual (VFR) and instrument flights (IFR), general (GA) and commercial (CAT) aviation. Common features and differences in the functioning of particular types of aviation.

4. Meteorological service for international air navigation (ICAO Annex 3)? discussion of the importance of weather in aviation, basic weather reports, METAR, SNOWTAM, TAF, GAMET. Coding and decoding of messages.

5. Aeronautical charts (ICAO Annex 4)? responsibility, basic types of maps and projections. Overview of basic units of measurement for use in air and ground operations in aviation (ICAO Annex 5)? dependencies between units, genesis of their use.

6. Air traffic services (ICAO Annex 11) and Aeronautical Information Services (ICAO Annex 15). Overview of goals and differences. Overview of air traffic control services, analysis of air traffic in uncontrolled (FIS) and controlled (ATC) airspace.

7. Aerodromes (ICAO Annex 14). Design and operation of airports (Volume I) and Heliports (Volume II). Overview of the register of airports and the register of landing sites. Definitions and number of objects in Poland, legal requirements related to the establishment and operation of airports and landing sites. Environmental protection (ICAO Annex 16). Environmental management at airports? Aircraft noise (Volume I) and Aircraft engine emissions (Volume II).

8. Flight preparation, mass and balance. Differences in calculating parameters for general and commercial aviation. Minima VFR, IFR. The essence of General Aviation (GA) and Commercial Aviation (CAT)

9. Operation of aircraft (ICAO Annex 6). International coverage of commercial and general aviation (airplanes) and helicopter operations)

10. Personnel licensing (ICAO Annex 1). Overview of basic aviation licenses, requirements for becoming candidates, classes of medical certificates. Licensing of ground personnel (Controllers, Informants, Mechanics).

11. Nationality and registration marks (ICAO Annex 7), Airworthiness of aircraft (ICAO Annex 8) and Facilitations (ICAO Annex 9)

12. Air communications (ICAO Annex 10). Radio navigation aids, Telecommunication procedures, Communication systems, Surveillance and collision avoidance systems, and Use of the aviation radio frequency range.

13. ASAR service? Search and rescue (ICAO Annex 12) and Aircraft Accident and Incident Investigation (ICAO Annex 13). Overview of the scope, procedures and responsibilities

14. Safety in air traffic. Protecting international civil aviation against acts of unlawful interference (ICAO Annex 17). Air traffic related elements in Aviation Safety Management (ICAO Annex 19) and Safe Transport of Dangerous Goods by Air (ICAO Annex 18)

15. The European Union in the aspect of civil aviation (European institutions, principles of market regulation in the EU,

16. International civil aviation organizations and institutions (ICAO, IATA, EASA, EUROCONTROL)

17. Organization and management of military aviation in Poland

18. Aviation regulations and transport policy (Aviation Law, ICAO Convention and characteristics of its annexes, JAR-OPS regulations)

19. Air transport market in Poland and the EU, Przedsiębiorstwo Porty Lotnicze, the influence of airports on the development of regions).

20. Airlines (operating principles, alliances), postal and cargo transport, general and recreational aviation

21. National civil aviation safety program

Teaching methods

Informative (conventional) lecture (systematic transfer of information) - through multimedia presentations.

Bibliography

Basic

1. Szutowski L., Poradnik pilota samolotowego, Wyd. Avia-test, Poznań 2007

2. Compa T., Zarządzanie przestrzenią powietrzną, AON, Warszawa 2003

3. Domicz J., Szutowski L., Podręcznik pilota samolotowego, Poznań 2008

4. Laskowski R., Osiągi, wyważenie i planowanie lotu, Szkolenie samolotowe EASA, Żółwin, 2014

5. Aneksy ICAO

6. Żylicz. M .Międzynarodowe prawo lotnicze , Lexis, Warszawa 2011

7. Compa.M . Przepustowość przestrzeni powietrznej. WLOP Dęblin 2009

Additional

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

2. Ustawa Prawo Lotnicze.

3. Materiały szkoleniowe, wewnętrzne Polskiej Agencji Żeglugi Powietrznej

Breakdown of average student's workload

	Hours	ECTS
Total workload	140	7,0
Classes requiring direct contact with the teacher	69	5,0
Student's own work (literature studies, preparation for laboratory classes, preparation for the exam, reports preparation)[1]	71	2,0

[1] delete or add other activities as appropriate