



COURSE DESCRIPTION CARD - SYLLABUS

Course name

Air Traffic Management

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

1/2

Profile of study

general academic

Course offered in

Polish

Requirements

elective

Number of hours

Lecture

30

Laboratory classes

Tutorials

15

Projects/seminars

Other (e.g. online)

Number of credit points

2

Lecturers

Responsible for the course/lecturer:

dr inż. Marta Galant-Gołębiowska

email: marta.galant@put.poznan.pl

Faculty of Civil and Transport Engineering

ul. Piotrowo 3 60-965 Poznań

Responsible for the course/lecturer:

Jarosław Niewiński

email: j.niewinski@pansa.pl

Polish Air Navigation Services Agency

ul. Wieżowa 8 02-147 Warszawa, POLAND

Prerequisites

Knowledge P6S_WG, P6S_WK

Skills P6S_UW, P6S_UK, P6S_UU, P6S_UO

Social competencies P6S_UU, P6S_KR, P6S_KO, P6S_UO

Course objective

To familiarize students with the construction and functions of selected air traffic management systems

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 basic knowledge in the field of technical diagnostics of means of transport and methods and ways of solving issues of their technical condition and forecasting, knows: conditions for diagnosing technical facilities, the essence of technical diagnostics in the application to air transport, tasks and purposes of technical diagnostics [P7S_WG] [K2A_W20]
3. 3. Has a structured, theoretically founded general knowledge covering key issues in the field of flight safety and risk assessment P7S_WG K2A_W22
4. 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 P7S_WG K2A_W23
5. 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 the patent information resources P7S_WK K2A_W25

Skills

P7S_UK K2A_U02 is able to communicate using various techniques in a professional environment and other environments using a formal record of construction, technical drawing, concepts and definition of the scope of the studied field of study

P7S_UW, P7S_UU K2A_U03 has the ability to self-study using modern teaching tools, such as remote lectures, websites and databases, didactic programs, e-books

P7S_UW, P7S_UU K2A_U04 can acquire information from literature, the Internet, databases and other sources. Can integrate the information obtained and interpret conclusions and create and justify opinions

Social competences

1. Is ready to critically evaluate your knowledge and content, recognize the importance of knowledge in solving cognitive and practical problems and to consult experts in the event of difficulties in solving the problem yourself [P7S_KK] [K2A_K02]

2. Is aware of the importance and understands the non-technical aspects and effects of engineering activities, including its impact on the environment, and the related responsibility for the decisions made P7S_KR K2A_K03



Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Lecture: written exam of the content processed in the classroom

Classes: final test - planning and calculation of basic parameters of air transport (CAT)

Programme content

1. International Civil Aviation Organization ICAO and other aviation organizations (Eurocontrol, EASA, PANSO, ULC). Conventions arranging air navigation. Historical conditions of aviation law and the structure of its functioning.
2. ATFCM traffic flow management
3. Airspace management - FUA - AFUA, FRA, new surveillance techniques, air traffic management systems (AMS2000, PEGASUS)
4. Modern aircraft positioning systems in RNAV, multilateration in ATM, automatic dependent ADS-B surveillance in ATM
5. New tendencies in air traffic management in Europe FUA → SES → SESAR → SESAR II
6. Free en-route flights, FUA / FRA in controlled space
7. Surveillance techniques: VOR, DME, ILS, MLS, GPS NAVSTAR and GLONASS, LAAS (GBAS), EGNOS in ATM (4), navigation based on the characteristics of PNP RNAV in ATM (2).

Teaching methods

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

Bibliography

Basic

1. Szutowski L., Poradnik pilota samolotowego, Poznań 2007
2. Compa T., Zarządzanie przestrzenią powietrzną, AON, Warszawa 2003
3. Domicz J., Szutowski L., Podręcznik pilota samolotowego, Poznań 2008

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	45	2,0
Student's own work (preparation for tests) ¹	5	0,0

¹ delete or add other activities as appropriate