



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Safety Management System

### Course

Field of study

Aerospace Engineering

Area of study (specialization)

Level of study

Second-cycle studies

Form of study

full-time

Year/Semester

1/2

Profile of study

practical

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:

dr inż. Mariusz KRZYŻANOWSKI

Responsible for the course/lecturer:

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Polish Air Navigation Services Agency

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### Prerequisites

Knowledge: The student has basic knowledge of air transport and rules of air traffic organisation, knows the legal basis of aviation operation and has general knowledge of transport safety management

Skills: The student is able to associate and integrate information obtained, analyse phenomena occurring in the environment, draw conclusions, formulate and justify opinions

Social competences: The student is able to search for information in literature and knows the rules of discussion; has the ability to formulate a research problem and look for its solution, shows independence in solving problems and ability to cooperate in a group



## Course objective

Introduction to and mastery of basic knowledge of air traffic safety management systems, safety culture and safety measurement methods.

## Course-related learning outcomes

### Knowledge

1. Has extended knowledge necessary to understand the profile subjects and specialist knowledge about the construction, methods of construction, production, operation, air traffic management, safety systems, impact on the economy, society and the environment in the field of aviation and cosmonautics [K2A\_W01]
2. Has structured knowledge and is fluent in the concepts of safety management, knows the standards in force on the territory of Poland in the field of civil aviation safety management, and safety programs at the global, European and national level [K2A\_W20]

### Skills

1. Is able to name and describe the security policy and objectives, knows the requirements in the field of security management [K2A\_U11]
2. He can identify the differences between the National Program for Civil Aviation Safety and the National Safety Plan [K2A\_U12]

### Social competences

1. Understands the need for lifelong learning; can inspire and organize the learning process of other people [K2A\_K01]
2. Correctly identifies and resolves dilemmas related to the profession [K2A\_K06]
3. Is aware of the social role of a technical university graduate, and especially understands the need to formulate and convey 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 generally comprehensible manner [K2A\_K09]

## Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Written test with the content presented and discussed during the class

## Programme content

1. Introduction to Safety Management System (SMS)
2. ICAO and CANSO SMS Model
3. Safety policy and objectives
4. Reporting systems for occurrences affecting aviation safety



5. Occurrence investigation and tools used in the process
6. Safety measurement -lagging and leading indicators
7. Safety surveys
8. Hazard identification and risk management - rules and methods of risk evaluation and analysis
9. Safety culture with Just culture
10. Safety promotion and co-operation between SMS aviation organisations
11. New approach to safety management system - Safety II

### 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. Safety Management Manual, ICAO Doc 9859, 4th edition, 2018
2. Skorupski J.: Ilościowe metody analizy incydentów w ruchu lotniczym, 2018, Oficyna Wydawnicza Politechniki Warszawskiej.
3. Skorupski J.: Metody wymiarowania bezpieczeństwa ruchu lotniczego, 2009

#### Additional

1. Commission Implementing Regulation (EU) 2017/373 of 1 March 2017 laying down common requirements for providers of air traffic management/air navigation services and other air traffic management network functions and their oversight
2. Regulation (EU) No 376/2014 of the European Parliament and of the Council of 3 April 2014 on the reporting, analysis and follow-up of occurrences in civil aviation
3. Ustawa Prawo lotnicze z dnia 3 lipca 2002 r. z późniejszymi zmianami - Załącznik do obwieszczenia Marszałka Sejmu Rzeczypospolitej Polskiej z dnia 17 września 2020 r. (poz. 1970)



### Breakdown of average student's workload

	Hours	ECTS
Total workload	50	2,0
Classes requiring direct contact with the teacher	40	2,0
Student's own work (literature studies, preparation for tutorials, preparation for test) <sup>1</sup>	10	0,0

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