COURSE DESCRIPTION CARD - SYLLABUS

Course name
Safety Management System [S2LiK1>SZBSMS]

Course

Field of study
Aerospace Engineering

Year/Semester
1/2

Area of study (specialization)
Civil Aviation

Profile of study
general academic

Level of study
second-cycle

Course offered in
Polish

Form of study
full-time

Requirements
compulsory

Number of hours

Lecture
15

Laboratory classes
0

Other (e.g. online)
0

Tutorials
0

Projects/seminars
15

Number of credit points

2,00

Coordinators

dr inż. Mariusz Krzyżanowski

Lecturers

Prerequisites

Knowledge: The student has a basic knowledge of air transport, knowledge 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 Social competences: The student is able to independently search for information in the literature and knows the rules of discussion; ability to formulate a research problem and search for its solution, independence in problem-solving, ability to cooperate in a group

Course objective

To familiarize students with issues related to aviation safety management - both on the part of the company and the aviation authority. Ability to develop and apply risk management 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 for selected specialties: Civil Aviation, Unnamed Aerial Vehicle

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

Skills:
1. is able to name and describe the security policy and objectives, knows the requirements in the field of security management
2. he can identify the differences between the National Program for Civil Aviation Safety and the National Safety Plan

Social competences:
1. understands the need for lifelong learning; can inspire and organize the learning process of other people
2. correctly identifies and resolves dilemmas related to the profession
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

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

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Lecture: exam covering the issues discussed in class.
Project: defense of the project prepared during the classes

Programme content

LECTURE:
1. Introduction to SMS: safety and safety management (definitions, importance of the system), evolution of aviation safety management (technical, human, cultural, organizational factor), examples, literature (J. Reason, S. Dekiker, K. Hotlinger)
2. Legal environment and safety programs: legal regulations in the field of aviation safety (certification of aviation activities, supervision of aviation organizations, SMS as an element of aviation activity certification), legal bases of SMS - international part of ICAO (Annex 19, SMM ICAO Doc 9854), basics legal SMS European part of EASA (EASA system, SMS in terms of EASA, PART ORA, ARA, ADR, AR), legal
basis SMS - national part of CAA
3. Safety programs: World Aviation Safety Plan (GASP ICAO), European Aviation Safety Program (EPAS), National Aviation Safety Program (KPBwLC), National Safety Plan
4. Elements of SMS in an aviation organization: the purpose of SMS functioning in an aviation organization, safety policy and objectives, responsibility for safety, personnel, structure and documentation of SMS, safety management - introduction, ensuring safety - introduction, safety promotion
5. Safety management and assurance: risk management - basic concepts, hazard identification, risk assessment and mitigation, change management, safety indicators, safety audits and reviews, tools supporting risk management and assurance (BowTie, CBZ and ADREP nomenclature, ICAO Gap Analysis / SMS Evaluation Tool EASA)
6. Reporting and investigation of aviation occurrences: ICAO and EU regulations (Annex 13, EU Regulation No. 996/2010 and 376/2014, occurrence reporting according to PART), reporting of accidents and serious incidents, relations with SCAAI, Aviation occurrence reporting systems in the organization (compulsory, confidential, anonymous, voluntary), safety investigation in the organization, just culture issues
7. SMS environment: compliance monitoring (CMM), emergency action plan (ERP), human factor, elements of aviation psychology (CISM)
Project:
1. Identification of sources of threats
2. Risk risk assessment
3. Implementation of the risk risk assessment in the selected area of analysis
4. Safety indicators

5. Audits and safety reviews
6. Tools supporting risk management and assurance (BowTie, CBZ and ADREP nomenclature, ICAO Gap Analysis / SMS Evaluation Tool EASA)

Course topics

none

Teaching methods

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

Bibliography

Basic
1. Aviation Law and Procedures / Henryk Jafernik, Radosław Fellner, Gliwice, 2015
2. ICAO Annex 13
3. Civil aviation safety: aspects of international cooperation / Marian Bujnowski; Foundation for International Studies - Foundation of International Studies, Warsaw: SCHOLAR Publishing House, 2016.
4. The Aviation Law Act.
5. Safety Management Manual
Additional
1. Air traffic management in the Polish airspace, WLOP, Warsaw 2002
2. Compa T., Airspace management, AON, Warsaw 2003

Breakdown of average student's workload

	Hours	ECTS
Total workload	55	2,00
Classes requiring direct contact with the teacher	30	1,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	25	1,00