



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Methods of air events analysis [S2LiK1>MAZL]

### Course

Field of study

Aerospace Engineering

Year/Semester

2/3

Area of study (specialization)

Unmanned Aerial Vehicles

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

0

Tutorials

15

Projects/seminars

0

### Number of credit points

3,00

### Coordinators

dr inż. Anna Kobaszyńska-Twardowska

anna.kobaszynska-twardowska@put.poznan.pl

### Lecturers

### Prerequisites

A student starting this course should have knowledge of aviation law and organizations, have a well established knowledge of mathematics, physics and aerodynamics, and know the theoretical basis of issues related to aviation safety, be able to obtain information from literature and the Internet.

### Course objective

Acquainting with various methods of aviation incident analysis, division and classification of aviation incidents, and the principles of operation of organizations investigating aviation incidents.

### Course-related learning outcomes

Knowledge:

1. Has detailed and structured knowledge in the field of risk management in unmanned operations with varying degrees of operator control
2. Has a structured knowledge and is fluent in the concepts of safety management, knows the standards in force in Poland in the field of civil aviation safety management, and safety programs at the global, European and national levels
3. has a structured, theoretically founded general knowledge covering key issues in the field of flight

safety and risk assessment

4. has detailed knowledge related to selected issues in the field of human capabilities and limitations in aviation and aerospace

Skills:

1. can communicate using various techniques in the professional environment and other environments, using the formal notation of construction, technical drawing, concepts and definitions of the scope of the field of study studied

2. can use formulas and tables, technical and economic calculations with the help of a spreadsheet, programming tools of his own authorship, specialized software

3. is able to use the following languages: native and international to a degree enabling the understanding of technical texts and writing technical descriptions of machines in the field of aviation and aerospace using dictionaries (knowledge of technical terminology)

Social competences:

1. 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 decisions

2. 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 the achievements of technology 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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The knowledge acquired during the lecture is verified by an activity assessment and an exam. The skills acquired during the exercises are verified on the basis of a final test.

### Programme content

1. Air transport safety
2. Classification of aviation occurrences categories
3. Quantitative methods of event analysis
4. Qualitative methods of event analysis
5. Risk assessment methods in various modes of transport
6. Events in air traffic
7. Causal models in incident analysis

### Course topics

none

### Teaching methods

Informative (conventional) lecture (transfer of information in a systematic way) - can be (propedeutical) or monographic (specialist)

Exercise method (subject exercises) - in the form of auditorium exercises (the application of acquired knowledge in practice - can take a different nature: solving cognitive tasks or training psychomotor skills; transforming conscious activity into a habit by repetition)

### Bibliography

Basic

1. Ilościowe metody analizy incydentów w ruchu lotniczym. Skorupski J., Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa, 2018

2. Analiza i badania elementów systemów transportowych różnych gałęzi transportu, Zboiński, Krzysztof. Red., Politechnika Warszawska. Oficyna Wydawnicza, 2014.

3. Odpowiedzialność za szkodę na ziemi wyrządzoną ruchem statku powietrznego, Anna Konert, Wolters Kluwer Polska. LEX a Wolters Kluwer business, 2014.

Additional

1. Podręcznik klasyfikacji kategorii zdarzeń lotniczych (tzw. „Occurrence Category”) wg systematyki ICAO ADREP oraz ECCAIRS 5 dla organizacji lotniczych, zgodny z wymogami Rozporządzenia Parlamentu Europejskiego i Rady (UE) nr 376/2014

#### Breakdown of average student's workload

	Hours	ECTS
Total workload	60	3,00
Classes requiring direct contact with the teacher	30	1,50
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	30	1,50