COURSE DESCRIPTION CARD - SYLLABUS

Course name
Risk management for UAV flights

Course

Field of study
Aviation and cosmonautics
Area of study (specialization)
Unmanned Aerial Vehicles
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

Year/Semester
1/2
Profile of study
general academic
Course offered in
polish
Requirements
elective

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:
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Responsible for the course/lecturer:
Responsible for the course/lecturer:

Prerequisites

Knowledge:
The student has a basic knowledge of aviation law. The student knows the basics of mathematics, with particular emphasis on the theory of probability. The student knows the concept of risk.
Skills:

The student is able to analyze complex processes: identify and describe their component parts.
Social competences:
The student is able to cooperate in a group, assuming various roles in it. The student is able to determine the priorities important in solving the tasks set before him. The student shows independence in solving problems, gaining and improving the acquired knowledge and skills.

Course objective

To acquaint students with the specifics of risk management for UAV operations

Course-related learning outcomes

Knowledge
1.1. has detailed knowledge related to selected issues in the field of manned and unmanned spacecraft construction, in the field of on-board equipment, control systems, communication and recording systems, life support systems, satellite navigation systems, teletection, image recognition, automation of individual systems
2. has knowledge of the use of unmanned aerial vehicles, their operation and procedures used in BS traffic
Skills
1.1. Can plan and perform a flight with an unmanned aerial vehicle, taking into account the availability of airspace, terrain obstacles, UAV capabilities and the type of flight
2. Can identify the sources of threats in various areas of aircraft operation, formulate the related threats, assess the risk of threats using appropriate methods and propose ways to ensure safety
Social competences
1. understands the need for lifelong learning; can inspire and organize the learning process of other people
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 decisions

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:
Lecture: written test (open test and questions)
Exercises: colloquium in writing

Programme content

LECTURE:
1. SORA method - Jarus,
2. Flight procedures,
3. Procedures to be followed in the event of loss of control over UAVs
4. Risk analysis for UAV flights
5. Risk management for UAV flights

EXERCISES:
1. Review of threats in UAV flights,
2. Analysis of the procedures to be followed in the event of loss of control over the UAV
3. Examples of risk management procedures for UAV flights

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. Prawo i procedury lotnicze / Henryk Jafernik, Radosław Fellner, Gliwice, 2015
2. Aneks 13 ICAO
3. Bezpieczeństwo lotnictwa cywilnego : aspekty współpracy międzynarodowej / Marian Bujnowski ; Fundacja Studiów Międzynarodowych - Fundation of International Studies, Warszawa : Wydawnictwo Naukowe SCHOLAR, 2016.
4. Ustawa Prawo Lotnicze.
5. Safety Management Manual
Additional
1. Zarządzanie ruchem lotniczym w przestrzeni powietrznej RP, WLOP, Warszawa 2002
2. Compa T., Zarządzanie przestrzenią powietrzną, AON, Warszawa 2003

Breakdown of average student's workload

	Hours	ECTS
Total workload	50	2,0
Classes requiring direct contact with the teacher	30	1,0
Student's own work (literature studies, preparation for tutorials, preparation for tests and exam) [1]	20	1,0

[1] delete or add other activities as appropriate