



COURSE DESCRIPTION CARD - SYLLABUS

Course name

Systems of use of UAV

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

30

Laboratory classes

0

Other (e.g. online)

0

Tutorials

0

Projects/seminars

Number of credit points

2

Lecturers

Responsible for the course/lecturer:

dr Jędrzej Łukasiewicz

Responsible for the course/lecturer:

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Wydział Inżynierii Lądowej i Transportu

ul. Piotrowo 3, 60-965 Poznań

Prerequisites

Knowledge: Basic knowledge of the influence of harmful exhaust gas compounds and noise on humans.

Skills: The ability to solve research problems using scientific methods. The ability to find cause-and-effect relationships based on the acquired knowledge.

Social competences: The ability to precisely formulate questions; the ability to define important priorities in solving the tasks set for him; ability to formulate a research problem and search for its solution, independence in problem-solving, ability to cooperate in a group.

Course objective

Detailed knowledge and analysis of issues related to the use of unmanned aerial vehicles.



Analysis of the possibilities and scope of the use of unmanned aerial vehicles. Analysis of the possibility of applying the current technique in unmanned aerial vehicle systems

Course-related learning outcomes

Knowledge

1. Has detailed knowledge related to selected issues in the field of manned and unmanned aerial vehicles, in the field of on-board equipment, control systems, communication and registration systems, life support systems, automation of individual systems
2. 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, teledetection, image recognition, automation of individual systems.
3. Has knowledge of the use of unmanned aerial vehicles, their operation and procedures used in UAV traffic.
4. He knows the rules of unmanned flights and the provisions of aviation law in force in Poland and Europe.

Skills

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. Is able to 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 made.
3. Can think and act in an entrepreneurial manner.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Written test covering issues discussed in the classroom.

Programme content

Identification of unmanned aerial systems, development of unmanned aerial vehicles, terminology and classifications, components of the unmanned aerial vehicle and aircraft system. Selected areas of civil unmanned aerial systems applications, capabilities and limitations of unmanned aerial vehicles in civil applications, prevention of adverse events and crisis management, protection of critical infrastructure, ensuring internal security, support for scientific research. International regulatory areas for unmanned



aerial vehicles, main legal areas related to the operation of remotely controlled air systems, aviation personnel licensing. Overview of unmanned aerial vehicles and their development prospects

Teaching methods

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

Bibliography

Basic

1. Tadeusz Zieliński, Funkcjonowanie bezzałogowych systemów powietrznych w sferze cywilnej. Silva Rerum 2014 r.
2. Ustawa z dnia 3 lipca 2002 r. Prawo lotnicze (Dz. U. z 2013 r. poz. 1393)

Additional

1. Civil Code

Breakdown of average student's workload

	Hours	ECTS
Total workload	60	2,0
Classes requiring direct contact with the teacher	35	1,0
Student's own work (literature studies, preparation for test) ¹	25	1,0

¹ delete or add other activities as appropriate