



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

**Remotely Piloted Aircrafts Systems**

### Course

Field of study

**Aerospace Engineering}**

Area of study (specialization)

Level of study

Second-cycle studies

Form of study

full-time

Year/Semester

1/1

Profile of study

general academic

Course offered in

Requirements

compulsory

Year/Semester

1/1

Profile of study

general academic

Course offered in

Requirements

compulsory

### Number of hours

Lecture

1

Laboratory classes

0

Other (e.g. online)

0

Tutorials

0

Projects/seminars

0

### Number of credit points

1

### Lecturers

Responsible for the course/lecturer:

Dr Jędrzej Łukasiewicz

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ul. Piotrowo 3, 60-965 Poznań

Responsible for the course/lecturer:

Responsible for the course/lecturer:

### Prerequisites

knows the Aviation Law Act

### Course objective

Detailed knowledge and analysis of issues related to the use of unmanned aerial vehicles. Analysis of the possibilities and scope of use of unmanned aerial vehicles. Analysis of the applicability of the current technique in unmanned aircraft systems.



## Course-related learning outcomes

### Knowledge

Has broadened knowledge, necessary for understanding of profile subjects and specialist knowledge about construction, methods of construction, manufacturing, operation, air traffic management, security systems, impact on the economy, society and the aviation and aerospace environment for selected specialties:

1. Aeronautical Engineering
  2. Space Engineering
  3. Civil Aviation
  4. Virtual Engineering in Aeronautics
2. Has detailed knowledge related to selected issues in the field of construction of manned and unmanned aircraft, in the field of on-board equipment, control systems, communication and registration systems, life support systems, automation of individual systems
  3. Has detailed knowledge related to selected issues in the field of construction of manned and unmanned spacecraft, in the field of on-board equipment, control systems, communication and registration systems, life support systems, satellite navigation systems, teletetection, image recognition, automation of individual systems
  4. Has basic knowledge of automation systems, microcontrollers, control algorithms, automation and industrial robots, electronic navigation systems used in machines, and wired and wireless communication systems in local computing networks used in aviation and cosmonautics
  5. Has ordered, theoretically founded specialist knowledge in the field of on-board equipment: as well as on-board and terrestrial electronic communication systems, remote sensing systems, observation systems, satellite navigation systems

### Skills

1. Is able to communicate using various techniques in the professional environment and other environments using the formal record of construction, technical drawing, concepts and the definition of the scope of the studied field of study
2. Has the ability to self-study using modern teaching tools, such as remote lectures, websites and databases, teaching programs, e-books
3. Is able to obtain information from literature, the Internet, databases and other sources. Is able to integrate the obtained information, interpret and draw conclusions, and create and justify opinions

### Social competences

1. Understand the need for lifelong learning; can inspire and organize the learning process of other people
2. It is ready to critically evaluate your problems and solves the problem of solving the problem yourself
3. Is aware of the importance of non-technical aspects of environmental aspects,
4. Is able to interact and work in a group, assuming different roles in it
5. Is able to define the tasks of implementation, correctly identifies and resolves dilemmas related to the profession

## 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 unmanned aircraft and air systems. Selected areas of application of civil unmanned air systems, capabilities and limitations of unmanned aircraft in civil applications, prevention of undesirable 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, licensing of flight crew. Overview of the construction of unmanned aerial vehicles and prospects for their development

## Teaching methods

multimedia presentation

## 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



**Breakdown** of average student's workload

	Hours	ECTS
Total workload	29	1
Classes requiring direct contact with the teacher	15	1
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) <sup>1</sup>	5	0

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