



COURSE DESCRIPTION CARD - SYLLABUS

Course name

Construction of an unmanned aerial vehicle

Course

Field of study

Aviation

Area of study (specialization)

Unmanned aerial vehicles

Level of study

First-cycle studies

Form of study

full-time

Year/Semester

2/3

Profile of study

Course offered in

Polish

Requirements

Number of hours

Lecture

30

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

jedrzej.lukasiewicz@put.poznan.pl

Wydział Inżynierii Lądowej i Transportu

ul. Piotrowo 3, 60-965 Poznań

Prerequisites

Knowledge:

1. Basics of mathematics, chemistry and physics.

Skills:

1. Using literature (textbooks, internet), the ability to perceive lecture content.

Social competences:



1. Awareness of the need to deepen engineering knowledge and its place in everyday life

Course objective

Getting to know the basic structure of UAVs

Course-related learning outcomes

Knowledge

1. has extended and in-depth knowledge of mathematics including algebra, analysis, theory of differential equations, probability, analytical geometry as well as physics covering the basics of classical mechanics, optics, electricity and magnetism, solid state physics, thermodynamics, useful for formulating and solving complex technical tasks related to engineering aeronautical and modeling
2. has ordered, theoretically founded general knowledge in the field of technology and various means of air transport, about the life cycle of means of transport, both hardware and software, and in particular about the key processes taking place in them
3. has ordered and theoretically founded general knowledge in the field of key technical issues and detailed knowledge of selected issues related to air transport, knows the basic techniques, methods and tools used in the process of solving tasks related to air transport, mainly of an engineering nature

Skills

1. is able to obtain information from various sources, including literature and databases, both in Polish and in English, integrate them properly, interpret them and make a critical evaluation, draw conclusions and exhaustively justify the opinions they formulate
2. is able to properly plan and perform experiments, including measurements and computer simulations, interpret the obtained results, and correctly draw conclusions from them
3. is able to properly select materials for simple aviation structures, and can indicate the differences between the fuels used in aviation

Social competences

1. understands that in technology, knowledge and skills very quickly become obsolete
2. is able to think and act in an entrepreneurial way, incl. finding commercial applications for the created system, bearing in mind not only the business benefits, but also the social benefits of the activity

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Written exam

Programme content

1. materials for the construction of UAV frames,
2. brushed and brushless motors,
3. ESC systems,
4. board computers,
5. sensors and detectors,



6. ground control apparatus

Teaching methods

Lecture: informative (conventional), information transfer in a systematic way

Bibliography

Basic

1. Drony dla początkujących, Terry Kilby, Belinda Kilby,
2. Drony, Wiktor Wyszywacz,
3. Rozporządzenie wykonawcze UE 2019/945

Additional

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Breakdown of average student's workload

	Hours	ECTS
Total workload	50	1,0
Classes requiring direct contact with the teacher	30	0,5
Student's own work (literature studies, preparation for classes, preparation for tests,) ¹	20	0,5

1 delete or add other activities as appropriate