# COURSE DESCRIPTION CARD - SYLLABUS

Course name
Construction of an unmanned aerial vehicle [S1Lot2-BSP>BBSP]

## Course

Field of study
Aviation

Year/Semester
2/3

Area of study (specialization)
Unmanned Aerial Vehicles

Profile of study
general academic

Level of study
first-cycle

Course offered in
Polish

Form of study
full-time

Requirements
elective

## Number of hours

Lecture
15

Laboratory classes
0

Other
0

Tutorials
0

Projects/seminars
0

## Number of credit points

1,00

## Coordinators

mgr inż. Marcel Kraśniewski
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## Lecturers

## Prerequisites

Knowledge: 1. Basics of mathematics, chemistry and physics. Skills: 1. Using literature (textbooks, internet), ability to perceive lecture content Social competences: 1. Awareness of the need to deepen engineering knowledge and its place in everyday life.

## Course objective

Familiarization with the construction of unmanned aerial vehicles

## Course-related learning outcomes

Knowledge:
1. has an extended and in-depth knowledge of mathematics and physics useful for formulating and solving complex technical tasks related to aviation and modeling real problems;
2. has an ordered, theoretically founded general knowledge of technology and various means of air transport;
has a structured and theoretically founded general knowledge in the field of key technical issues and detailed knowledge in the field of selected issues related to air transport;

Skills:
English, integrate them properly, interpret and critically evaluate them, draw conclusions and exhaustively justify;
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 constructions, to indicate the differences between fuels used in aviation;

Social competences:
1. understands that in technology, knowledge and skills very quickly become obsolete;
2. can think and act in an entrepreneurial way, incl. finding commercial applications for the created system, taking into account not only the business benefits, but also the social benefits of the conducted activity;

## Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Lecture: writing exam

## Programme content

The curriculum covers basic issues related to the construction of an unmanned aerial vehicle. Students are acquainted with materials used in UAV construction, control systems and on-board computers. The subject also covers the area related to drives used in UAVs and ground systems and possible functionalities of UAV's.

## Course topics

1. Materials for the construction of UAV frames;
2. Brushed and brushless motors;
3. ESC systems;
4. On-board computers;
5. Sensors and detectors;
6. Ground control equipment;

## Teaching methods

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

## Bibliography

Basic:
1. Drones for Beginners, Terry Kilby, Belinda Kilby,
2. Drones, Wiktor Wyszywacz,
3. EU Implementing Regulations 2019/945
4.
Breakdown of average student's work
Hours ECTS
Total workload 15 1,00
Classes requiring direct contact with the teacher 15 1,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation) 0 0

Additional:
-

## Breakdown of average student's workload

| | Hours | ECTS |
|---|---|---|
| Total workload | 0 | 0,00 |
| Classes requiring direct contact with the teacher | 0 | 0,00 |
| Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation) | 0 | 0,00 |