



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Construction of aircraft fuselages [S1Lot2-BSP>BKS]

### Course

Field of study

Aviation

Year/Semester

3/5

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

15

Projects/seminars

30

### Number of credit points

5,00

### Coordinators

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### Lecturers

### Prerequisites

Knowledge: Basic knowledge of mathematical analysis, strength of materials, basics of machine construction. Skills: Have basic skills in using software supporting design, as well as efficiently obtain additional information from various sources. Social competence: understands the need to improve one's qualifications and is ready to work in a team.

### Course objective

Familiarization with loads and construction of selected types of airframes. Course-related learning outcomes none

### Course-related learning outcomes

Knowledge:

- 1.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
- 2.has ordered, theoretically founded general knowledge covering key issues in the field of technical

thermodynamics, fluid mechanics, in particular aerodynamics

3.has an ordered, theoretically founded knowledge in the field of engineering graphics and machine construction: technical drawing, object projection, basic principles of engineering graphics, the use of CAD (Computer Aided Design) graphic programs in the construction of machines

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.can, when formulating and solving tasks related to civil aviation, apply appropriately selected methods, including analytical, simulation or experimental methods

Social competences:

1.understands that in technology, knowledge and skills very quickly become obsolete

2.is aware of the importance of knowledge in solving engineering problems and knows examples and understands the causes of faulty engineering projects that have led to serious financial and social losses, or to a serious loss of health and even life

3.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:

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Lecture

Assessment of knowledge and skills demonstrated in a written test of a test and accounting nature (the written test sheet contains information necessary to perform accounting tasks). Test passing threshold 50%. Rewarding grades from laboratory classes as well as attendance and activity during the lecture.

Exercises

Final colloquium and partial colloquium.

Project

Evaluation of the project on the basis of a report on the course of individual stages of its implementation. In addition, activity in class will be rewarded.

### Programme content

1. Requirements for fuselages of modern aircraft
2. Types of hull structures
3. Aircraft cabins and their construction
4. Placement of engines in the aircraft
5. Attaching the engines to the airframe

### Course topics

The course topics include a discussion of the requirements for aircraft fuselages, what are the fuselage structures, the structure of the aircraft cabin. The layout and mounting of engines in the aircraft will also be discussed.

### Teaching methods

Information lecture (conventional) (transmission of information in a systematic way) - can be of a course (propedeutic) or monographic (specialist) nature

Exercise method (subject exercises, exercises) - in the form of auditorium exercises (application of acquired knowledge in practice - can take various forms: solving cognitive tasks or training psychomotor skills; transforming a conscious activity into a habit through repetition)

Project method (individual or team implementation of a large, multi-stage cognitive or practical task, the effect of which is the creation of a work)

## Bibliography

### Basic:

1. S. Danilecki: Projektowanie samolotów, Wojskowa Akademia Techniczna, Warszawa 2018.
2. W. Brusow: Optymalne projektowanie wielozadaniowych obiektów latających, Biblioteka Naukowa Instytutu Lotnictwa. Warszawa 2006.

### Additional:

1. R. Cymerkiewicz, Budowa Samolotów, Wydawnictwa Komunikacji i Łączności 1982.

## Breakdown of average student's workload

	Hours	ECTS
Total workload	125	5,00
Classes requiring direct contact with the teacher	60	2,50
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	65	2,50