



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Management of unmanned aerial vehicles missions [S1Lot2-ORL>ZMBSP]

### Course

Field of study

Aviation

Year/Semester

3/6

Area of study (specialization)

Air Traffic Organisation

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

30

Laboratory classes

0

Other

0

Tutorials

15

Projects/seminars

0

### Number of credit points

2,00

### Coordinators

inż. Filip Orzeł

### 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 UAV Mission Management

### Course-related learning outcomes

Knowledge:

1. has structured, theoretically based general knowledge of technology and various means of air transport, of the life cycle of means of transport, both hardware and software, and in particular of the key processes occurring in them;
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 recording systems, automation of individual systems, has basic knowledge of flight simulation training devices and simulation methods used to solve air transport issues;
3. has detailed knowledge related to selected issues in the field of navigation, flight mechanics and

piloting technique, the use of simulators, flight principles, its preparation, as well as related operational procedures;

Skills:

1. is able to notice legal aspects in the process of formulating and solving air transport tasks, in particular use aspects of European and national aviation law;
2. is able to analyse the strategies of enterprises and interpret their activities and apply in practice the basic tools of strategic analysis;
3. is able to estimate various types of costs, is able to verify and evaluate market phenomena, is able to assess the factors of economic growth and the importance of money for its development is able to decide on economic choices in the field of consumption and production;

Social competences:

1. understands that in technology knowledge and skills very quickly become outdated;
2. is aware of the importance of knowledge in solving engineering problems and knows examples and understands the causes of malfunctioning engineering projects that have led to serious financial or social losses or to serious loss of health or even life;
3. correctly identifies and resolves dilemmas related to the performance of the profession of an aviation and astronautics engineer;

### Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Lecture: writing exam

Exercises: writing exam

### Programme content

In the classes, students will learn the basics of BSP mission execution principles, such as current legal sources related to airspace management. They will acquire skills and knowledge in preparing BSP for flight, obtaining the necessary permissions depending on the flight location, and all operational procedures.

### Course topics

1. Airspace management at the global, European, and Polish levels.
2. Aviation regulations concerning unmanned aerial vehicles (UAVs).
3. Preparation of the aircraft for flight.
4. Obtaining flight permissions.
5. Pre-flight procedures, in-flight procedures, post-landing procedures, emergency procedures

### 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. Aviation Law Act,
4. EU Implementing Regulations 2019/947 and 2019/945,
5. Guidelines No. 7 of the President of the Civil Aviation Authority of 2021

Additional:

1. Pilecki S., Aviation and astronautics, WKŁ, Warsaw 1984

### Breakdown of average student's workload

	Hours	ECTS
Total workload	50	2,00
Classes requiring direct contact with the teacher	45	1,50
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	5	0,50