



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Meteorology

### Course

Field of study

Aviation

Area of study (specialization)

Level of study

First-cycle studies

Form of study

full-time

Year/Semester

1/2

Profile of study

general academic

Course offered in

polish

Requirements

compulsory

### Number of hours

Lecture

15

Laboratory classes

Tutorials

15

Projects/seminars

Other (e.g. online)

### Number of credit points

2

### Lecturers

Responsible for the course/lecturer:

mgr Maria Nowaczyk

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Responsible for the course/lecturer:

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### Prerequisites

The student starting this subject should have basic knowledge of environmental phenomena, physical processes shaping the weather, interpretation of weather forecasts presented in various forms. He should also have the ability to apply the scientific method in solving problems and be ready to cooperate within a team.

### Course objective

Familiarizing the student with the processes and phenomena determining the weather, weather systems and phenomena dangerous to flight and disruptive to the operation of navigation and communication devices.

### Course-related learning outcomes

Knowledge



1. has basic knowledge of the vocabulary used in English to describe mathematical operations and the data presented in the diagram / graph. Has knowledge of formulating a text in English explaining / describing a selected specialist issue, has basic knowledge of the vocabulary used in English to describe the technological support of air communication, flight control systems, safety procedures at the airport related to the presence of animals, aircraft control surfaces, maneuvers performed by plane
2. has basic knowledge of environmental protection in transport, is aware of the risks associated with environmental protection and understands the specificity of the impact of mainly air transport on the environment as well as social, economic, legal and other non-technical conditions of engineering activities

#### Skills

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

#### Social competences

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

#### Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Lecture:

- assessment of knowledge and skills demonstrated on the written test - 1.5 hour

exercises:

The knowledge acquired as part of the exercises is verified by two 45-minute colloquia carried out during 3 and 7 classes

#### Programme content

Lecture:

The Atmosphere, troposphere, stratosphere, air temperature, Development of inversions, types of inversions, Atmospheric pressure, Air density, International Standard Atmosphere (ISA). Wind, Definition and measurement of wind. Thermodynamics. Clouds and fog. Air masses and fronts. Pressure systems: anticyclone, non-frontal depressions. Flight hazards: icing, turbulence, Thunderstorms. Meteorological information.

exercises:

Composition, extent, vertical division. Temperature near the Earth's surface, insolation, surface effects, effect of clouds, effect of wind. Pressure variation with height, contours (isohypses). Relationship between pressure, temperature and density. Altimetry. Primary cause of wind, pressure gradient, Coriolis force, gradient wind. Cloud types and cloud classification. Movement of fronts and pressure systems, life cycle.



## Teaching methods

1. Lecture: multimedia presentation, illustrated with examples given on the board.
2. Exercises: examples given on the board and performance of tasks given by the teacher - practical exercises.

## Bibliography

### Basic

1. Domicz J., Szutowski L. Podręcznik pilota samolotowego, Technika Poznań 2001 Dunlop S.,
2. Pogoda - przewodnik ilustrowany, Świat Książki Warszawa 2003 Międzynarodowy atlas chmur, WMO 1956
3. Ostrowski M., Meteorologia dla lotnictwa sportowego, Aeroklub Polski Warszawa 2004
4. Petterssen S., Zarys meteorologii PWN Warszawa 1964
5. Roth G., Pogoda i klimat, Świat Książki Warszawa 2000
6. Schmidt M., Meteorologia WKiŁ Warszawa 1975
7. Schmidt M., Meteorologia dla każdego WKiŁ Warszawa 1972
8. Szewczak P., Meteorologia dla pilota samolotowego (PPL, CPL, ATPL, IR), Avia-test Poznań 2007
9. Słownik meteorologiczny pod red. Niedźwiedź T. PTGeofizyczne IMGW Warszawa 2003
10. Słownik pojęć geograficznych WEGŚ pod red. Kostrzewski A. Poznań 2001
11. Szczeciński Cz., Meteorologia na usługach lotnictwa WK Warszawa 1952
12. Światowa Organizacja Meteorologiczna, Podstawy meteorologii opr. B.J.Retallack IMGW 1991
13. Tamulewicz J., Pogoda i klimat Ziemi, WEGŚ tom V Poznań 1997
14. Tamulewicz J., Wody i klimat Ziemi, Pogoda i klimat Poznań 2001
15. Woś A. Meteorologia dla geografów PWN Warszawa 1996
16. Zwieriew A.S. Meteorologia synoptyczna, WKiŁ Warszawa 1965

### Additional



### Breakdown of average student's workload

	Hours	ECTS
Total workload	50	2,0
Classes requiring direct contact with the teacher	30	1,5
Student's own work (literature studies, preparation for exercises, preparation for colloquium, preparation for passing) <sup>1</sup>	20	0,5

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