



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Astronomy [S1Lot2>Astro]

### Course

Field of study

Aviation

Year/Semester

2/3

Area of study (specialization)

Air Transport Safety

Profile of study

general academic

Level of study

first-cycle

Course offered in

Polish

Form of study

full-time

Requirements

compulsory

### Number of hours

Lecture

15

Laboratory classes

0

Other

0

Tutorials

0

Projects/seminars

0

### Number of credit points

1,00

### Coordinators

Halina Prętko-Ziomek

### Lecturers

### Prerequisites

Knowledge: Basic knowledge of physics Skills: Is able to obtain information from literature, databases and other sources Social competences: Is aware of the responsibility for their own work and is ready to comply with the rules of teamwork and take responsibility for the role they play. Is aware of the importance of behaving in a professional manner, observing the rules of professional ethics and demanding the same from others

### Course objective

Learning the basics of modern astronomy. Understanding phenomena occurring in stars, planets and space.

### Course-related learning outcomes

Knowledge:

1. has detailed knowledge related to selected issues in the field of the most important phenomena occurring in the Earth's atmosphere, the possibility of their prediction, recognition, research, as well as limiting the negative impact of human activity on the surrounding environment

#### Skills:

1. can, when formulating and solving tasks related to civil aviation, apply appropriately selected methods,

#### Social competences:

1. understands that in technology, knowledge and skills very quickly become obsolete
  2. is aware of the social role of a graduate of a technical university, in particular understands the need to formulate and convey to the society, in an appropriate form, information and opinions on engineering activities, technological achievements, as well as the achievements and traditions of the engineer profession
- Methods for verifying learning outcomes and assessment criteria Learning outcomes presented above are verified as follows: assessment of the knowledge and skills demonstrated in the written examination.

### Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

none

### Programme content

The structure of the Universe

Evolution of stars

The structure of the Sun

The structure, dynamics, physical characteristics of planets

The genesis and structure of atmospheres and magnetospheres of planets and the Sun.

The Earth

Small bodies of the Solar System.

Other planetary systems

The history and present of space research

The celestial sphere

Satellite techniques

### Course topics

The structure of the Universe. Electromagnetic radiation the main source of information about the Universe

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methods of recording and analysis.

Evolution of stars. The formation of the Solar System.

The structure of the Sun. Solar activity and its influence on the Earth.

The structure, dynamics, physical characteristics of planets, dwarf planets and moons of the Solar System.

The

genesis and structure of atmospheres and magnetospheres of planets and the Sun.

The Earth: atmosphere, magnetosphere, interior structure, surface shaping mechanisms. Small Bodies of the Solar

System.

Other planetary systems: search methods, planet statistics, dynamic characteristics. The history and present of

space research, the most important planetary missions.

The celestial sphere - natural and artificial objects visible on the celestial sphere. Satellite techniques - basic issues

### Teaching methods

Informative (conventional) lecture (transmission of information in a systematic way) - may be of a course (propaedeutic) or monographic (specialist) nature

### Bibliography

Basic:

1. Encyclopedia of Astronomy and Astrophysics - eaa.iop.org

Uzupełniająca

2. Berotti, B., Farinella, P., Vokrouhlicky, D., 2003, Physics of the Solar System. Dynamics and Evolution, Space Physics and Spacetime Structure, Kluwer Academic Publishers.

Additional:

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### Breakdown of average student's workload

|                                                                                                                                         | Hours | ECTS |
|-----------------------------------------------------------------------------------------------------------------------------------------|-------|------|
| Total workload                                                                                                                          | 25    | 1,00 |
| Classes requiring direct contact with the teacher                                                                                       | 15    | 0,50 |
| Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation) | 10    | 0,50 |