



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Astronomy of the solar system

### Course

Field of study

Aerospace Engineering

Area of study (specialization)

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Level of study

First-cycle studies

Form of study

full-time

Year/Semester

1/1

Profile of study

general academic

Course offered in

Polish

Requirements

compulsory

### Number of hours

Lecture

15

Laboratory classes

0

Other (e.g. online)

0

Tutorials

0

Projects/seminars

0

### Number of credit points

1

### Lecturers

Responsible for the course/lecturer:

Justyna Gołębiewska

Responsible for the course/lecturer:

### Prerequisites

Knowledge - Basic physics from upper secondary school.

Skills - Logical thinking, learning comprehension, using textbooks.

Social competencies - Awareness of the purpose of learning and acquiring new knowledge.

### Course objective

Acquainting with the basic issues of modern astronomy. Understanding the phenomena occurring in stars, planets and space.

### Course-related learning outcomes

Knowledge

1 Has basic knowledge of the Universe, in particular the stars and solar system and phenomena occurring in them,

2. Has the ability to recognize of the most important objects on the Celestial sphere. Has basic knowledge of more important issues and problems in satellite technology, as well as space exploration capabilities, principles of operation of basic types of electromagnetic radiation detectors.



3. Has basic knowledge of the history of aviation and astronautics, especially aircraft and space engines, major events and people that have contributed to the development of specific fields of science relevant to human development, as well as the latest trends in the devices construction.

#### Skills

1. Can acquire information from literature, the Internet, databases and other sources. He can integrate the obtained information interpret and draw conclusions from them and create and justify opinions.

2 Has the ability to self-study using modern teaching tools, such as remote lectures, websites and databases, programs, e-books.

#### Social competences

1. understands the need to learn throughout life; can inspire and organize the learning process of other people

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

Learning outcomes presented above are verified as follows:

Lecture: Assessment based on the written exam conducted in the examination session after the end of the semester of study

#### Programme content

Structure of the Universe. Electromagnetic radiation - the main source of information about the Universe - ways of detections and analysis.

The evolution of stars. Origin of the Solar System.

The Sun, Solar activity and its impact on Earth.

Structure, dynamics, physical characteristics of planets, dwarf planets and moons of the Solar System. Genesis and structure of atmospheres and magnetospheres of planets and the Sun.

Earth: atmosphere, magnetosphere, interior structure, surface shaping mechanisms.

Small Solar System body

Other planetary systems: search methods, planet statistics, dynamic .

History and modernity of space research, the most important planetary missions.

Celestial sphere - natural and artificial objects visible on the Celestial sphere.

Satellite techniques - basic issues.

#### Teaching methods

Informative (conventional) lecture (providing information in a structured way) - may be of a course (introductory) or monographic (specialist) character



## Bibliography

### Basic

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

<https://solarsystem.nasa.gov/>, , [www.esa.int](http://www.esa.int)

### Additional

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

### Breakdown of average student's workload

	Hours	ECTS
Total workload	48	1,0
Classes requiring direct contact with the teacher	17	0
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) <sup>1</sup>	0	0,0

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