

DESCRIPTION OF THE COURSE OF STUDY

Course code	0719-2ID-F66_A	
Name of the course in	Polish	Astronomia
	English	Astronomy

1. LOCATION OF THE COURSE OF STUDY within the system of studies

1.1. Field of study	Data Engineering
1.2. Mode of study	full-time studies
1.3. Level of study	1 st cycle degree
1.4. Profile of study	general academic
1.5. Person/s preparing the course description	dr Janusz Krywult
1.6. Contact	krywult@ujk.edu.pl

2. GENERAL CHARACTERISTICS OF THE course of study

2.1. Language of instruction	English
2.2. Prerequisites	basics of physics and calculus

3. DETAILED CHARACTERISTICS OF THE COURSE OF STUDY

3.1. Form of classes	lecture, laboratory	
3.2. Place of classes	courses in the teaching rooms, planetarium and astronomical observatory of UJK	
3.3. Form of assessment	lecture - credit of grade laboratory - credit of grade	
3.4. Teaching methods	lecture – informative lecture laboratory – practical classes	
3.5. Bibliography	Required reading	Karttunen, H., Fundamental Astronomy, 2017, Springer
	Further reading	Shu, F., The Physical Universe: An Introduction to Astronomy, 1982, University Science Books

4. OBJECTIVES, SYLLABUS CONTENT AND INTENDED LEARNING OUTCOMES

4.1. Course objectives (including form of classes)

Lecture:

- C1. Understanding the connections between astronomy and various fields of physics.
 C2. Exploring our place in the Solar System and its influence on phenomena observed on Earth.
 C3. Learning about the structure and evolution of stars and their observed parameters.
 C4. Understanding the structure of galaxies and the large-scale structure of the Universe and cosmological models.

Laboratory:

- C1. Acquiring skills for independent research, formulating opinions, and discussing the obtained results.

4.2. Detailed syllabus (including form of classes)

Lecture and laboratory:

Basics of spherical astronomy. Astronomical instruments. Structure of the Solar System. Elements of heliophysics. Brightness, size, mass, and distances to stars. Internal structure of stars and their energy sources. Evolution of stars. Interstellar matter. Structure and evolution of galaxies. Cosmological models and the history of the Universe.

4.3 Intended learning outcomes

Code	A student, who passed the course	Relation to learning outcomes
within the scope of KNOWLEDGE:		
W01	defines the laws and principles related to the phenomena and structure of astronomical objects.	ID1A_W01 ID1A_W03 ID1A_W04

W02	knows the structure and evolution of stars as well as interstellar matter.	ID1A_W04 ID1A_W11
W03	knows the structure and evolution of galaxies.	ID1A_W04 ID1A_W12
W04	knows the large-scale structure of the Universe and cosmological models.	ID1A_W04 ID1A_W12
within the scope of ABILITIES:		
U01	has the skills to determine the values of fundamental physical quantities in the field of astronomy and assess the reliability of the obtained results.	ID1A_U01 ID1A_U02 ID1A_U05
U02	solves astrophysical problems using the learned methods and mathematical tools.	ID1A_U01 ID1A_U05 ID1A_U11
within the scope of SOCIAL COMPETENCE:		
K01	is aware of the engineer's role in providing competent information about astronomy to society.	ID1A_K01 ID1A_K03

4.4. Methods of assessment of the intended learning outcomes								
Teaching outcomes (code)	Method of assessment (+/-)							
	Test		Effort in class		Self-study		Group work	
	Form of classes		Form of classes		Form of classes		Form of classes	
	L	C	L	C	L	C	L	C
W01	+		+		+		+	
W02	+		+		+		+	
W03	+		+		+		+	
W04	+		+		+		+	
U01		+		+		+		+
U02		+		+		+		+
K01				+				

4.5. Criteria of assessment of the intended learning outcomes		
Form of classes	Grade	Criterion of assessment
lecture (L) (including e-learning)	3	at least 50% and not more than 60% of the total number of available points
	3,5	more than 60% and not more than 70% of the total number of available points
	4	more than 70% and not more than 80% of the total number of available points
	4,5	more than 80% and not more than 90% of the total number of available points
	5	more than 90% of the total number of available points
classes (C)* (including e-learning)	3	at least 50% and not more than 60% of the total number of available points
	3,5	more than 60% and not more than 70% of the total number of available points
	4	more than 70% and not more than 80% of the total number of available points
	4,5	more than 80% and not more than 90% of the total number of available points
	5	more than 90% of the total number of available points

5. BALANCE OF ECTS CREDITS – STUDENT'S WORK INPUT

Category	Student's workload	
	Full-time studies	Extramural studies
NUMBER OF HOURS WITH THE DIRECT PARTICIPATION OF THE TEACHER / CONTACT HOURS/	45	
Participation in lectures	15	
Participation in classes, seminars, laboratories	30	
INDEPENDENT WORK OF THE STUDENT/NON-CONTACT HOURS/	30	

Preparation for the lecture	10	
Preparation for the classes, seminars, laboratories	10	
Preparation for the exam/test	10	
TOTAL NUMBER OF HOURS	75	
ECTS credits for the course of study	3	

Accepted for execution (date and legible signatures of the teachers running the course in the given academic year)

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