

DISCIPLINE FILE (Subject content)

1. General informations

1.1 University	West University of Timisoara
1.2 Faculty	Physics
1.3 Department	Physics
1.4 Study direction	Physics
1.5 Study cycle	Master
1.6 Study program / qualification	Astrophysics, Elementary Particles and Computational Physics; according to COR: Physicist - 211101; Teacher - 233001; University Professor 231005

2. Subject matter information

2.1 Subject matter	Introduction in astronomy		AP1204				
2.2 Teacher - course	CS I Dr. Remus Boată						
2.3 Teacher - Seminar							
2.4 Teacher - Laboratory	CS I Dr. Remus Boată						
2.5 Year	I	2.6 Semester	II	2.7 Assesment type	V	2.8 Subject type	Ob

3. Study time distribution

3.1 Nr. of hours/week	3	In which: course	1	seminar	0	laboratory	2
3.2. Total hours in educational plan	42	In which: course	14	seminar	0	laboratory	28
Time distribution:							hours
Study after lecture notes, bibliography or notes							28
Additional documentation in the library, electronic specialty platforms/ field							56
Seminar / laboratory preparations, homework, portofolio and essays							10
Tutoring							
Exams							
Other activities...							
3.4 Total number of personal study hour	94						
3.5 Total number of hours in semester	136						
3.6 Number of credits	6						

4. Preconditions (where appropriate)

4.1. curriculum	•
4.2. skills	•

5. Conditions (where appropriate)

5.1 for course	<ul style="list-style-type: none"> • At the Faculty of Physics • Laptop and projector
5.2 for seminar/lab	<ul style="list-style-type: none"> • At the Faculty of Physics • Laptop and projector • At the Timisoara Astronomical Observatory • The equipment and teaching materials from the Timisoara Astronomical Observatory are used

6. Specific skills gained

Professional and objective competencies of the discipline	<p>1. Knowledge and Understanding: Apply the principles and laws of physics in solving theoretical or practical problems, under conditions of qualified assistance. Description of physical systems using specific theories and instruments (experimental and theoretical models, algorithms, schemes, etc.)</p> <p>2. Instrumental - Applicative: Using astronomical instruments for specific observations Using computers for some virtual astronomical observations and for acquiring and processing specific observational data</p> <p>3. Attitudinal: Scientific discernment. Research initiative Initiative for popularisation of science</p>
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7. Course objectives

7.1 Main objective	Achieving a general culture of the field, historical context. Understanding the main notions of astronomy and astrophysics.
7.2 Specific objectives	idem

8. Content

8.1. Curs	Teaching methods: lecture, conversation, exemplification
	Introduction in astronomy
	Astronomical instruments
	Spherical astronomy
	Spherical trigonometry
	The time
	Phenomena that modify the position of the stars
	Elements of celestial mechanics
	Cosmonautics
	Solar system
	The planets
	The Sun
	Measurement of solar radiation at ground level
	Models for estimating the solar radiation
	Models for forecasting the solar radiation

8.2. Seminar:	
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8.3. Laboratory:	
	Orientation on the sky
	Maps and stellar atlases
	Astronomical instruments I
	Astronomical instruments II
	Software for astronomy
	Determination of the height of some lunar mountains
	The satellites of Jupiter and the speed of light
	The Transit of Venus and Mercury
	Applications: coordinates, time
	Applications: celestial mechanics
	Astronomical observations
	Observations of sunspots
	Applications: models for estimating the solar radiation
	Applications: models for forecasting the solar radiation

Bibliography

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- Bercei E.: Astronomie, Tipografia Universității din Timișoara, Timișoara, 1986
- Berry R., Burnell J.: A Handbook of Astronomical Image Processing, Willmann-Bell, Richmond, 2000
- Chis Gh., Pál Á.: Astronomie, (Curs de inițiere), fascicula I – II, Universitatea "Babes-Bolyai" Facultatea de Matematica, Cluj-Napoca, 1975
- Henden A. A., Kaitchuck R.H.: Astronomical Photometry, Van Nostrand Reinhold Company, New York, 1982
- Howell S. B.: Handbook of CCD Astronomy, Cambridge University Press, Cambridge
- Kukarkin B.V., et al.: General Catalogue of Variable Stars, Third Edition, Sternberg State Astronomical Institute of Moscow State University, Moscow, 1969
- Paulescu M. Neculae A., Tulcan-Paulescu E., 2008. Măsurarea și estimarea radiației solare. Ed. Universității de Vest, Timișoara.
- Pop V., Blaga C.: Astronomie observațională, Editura Risoprint, Cluj-Napoca, 2005
- Ureche V.: Universul, Vol. I, Astronomie, Editura Dacia, Cluj-Napoca, 1982
- www3.gettysburg.edu/~marschal/clea/CLEAhome.html
- SRMS. Solar Platform of the West University of Timisoara, Timisoara, Romania. <http://solar.physics.uvt.ro/srms>.
- WRDC. World Radiation Data Center, St. Petersburg, Russia. Available online at: <http://wrdc.mgo.rssi.ru/>

Assesment

Periodic assessments (50%), final grid test and colloquium (50%).

Date:
25.01.2022

Course holder (Signature)

Director of department (Signature):