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I. OSNOVNI PODACI O KOLEGIJU						
Naziv predmeta	Astrofizički praktikum					
Akademska godina	2020./2021.					
Studijski program	Diplomski studij FIZIKA	***Smjer***	Svi			
Status predmeta	Izborni	***Godina***	2	***Semestar***	2	

BODOVNA VRIJEDNOST I NAČIN IZVOĐENJA NASTAVE	***ECTS koeficijent opterećenja studenta***	***Broj sati (P+V+S)***
	6	0+0+60

NASTAVNICI / LABORANTI	***Ime i prezime***	***Kontakt (email, telefon)***
Nositelj predmeta	Marina Manganaro	marina.manganaro@uniri.hr 584 644
Nositelj predmeta 2		
Asistent 1		
Asistent 2		

ODRŽAVANJE NASTAVE	***Vrijeme***	***Učionica***
Predavanja		
Vježbe		
Seminar/Praktikum	Utorak 10-14	161

KONZULTACIJE	***Vrijeme***	***Ured***
Nositelj predmeta	po dogovoru i e-poštom	O-S12
Nositelj predmeta 2		
Asistent		
Asistent 2		

II. POPIS TEMA - PREDAVANJA			
Tjedan	***Datum***	***Sati***	***Tema***
1.		4	Introductive lecture: Presentation of the course and of all the possible topics to be covered. List of sources which can be observed during the semester by MAGIC (or LST possibly) telescopes and by the optical telescope at the Rijeka Observatory. List of telescopes in Croatia and in the world which we could collaborate with. Students choose a topic and a source. COVID-19: if observations at the Rijeka Observatory will not be possible, we will work with archival data.
2.		4	Collecting literature about the source. Study the literature and prepare a short summary: the "Story" of our source.

3.		4	Discussion on observational strategies. Writing of an observational proposal (project) to be submitted to all the telescopes involved.
4.		4	Starting with the data analysis. How to analys MAGIC data. First part (Installing ROOT and Mars software. Downloading data from MAGIC repository.)
5.		4	Data analysis: how to analyze optical data.
6.		4	Data analysis: How to analyse MAGIC data. Second part (Analysis chain. How to build a Random Forest.)
7.		4	Observations at the Rijeka Observatory (If not possible because of COVID, we will coordinate with another optical telescope or using archival data)
8.		4	Observations at the Rijeka Observatory (If not possible because of COVID, we will coordinate with another optical telescope or using archival data)
9.		4	Working on the data collected
10.		4	Working on the data collected
11.		4	Working on the data collected
12.		4	Interpretation of results: starting writing down a report in form of a conference article.
13.		4	Interpretation of results: continue writing down a report in form of a conference article.
14.		4	Interpretation of results: continue writing down a report in form of a conference article.
15.		4	Seminar presenting the results to the Physics Department. Outreach activity at the Rijeka Observatory to present our results (if data from the Rijeka Observatory have been analysed).

III. SUSTAV OCJENJIVANJA		
Aktivnost koja se ocjenjuje	***Udio aktivnosti u ECTS bodovima***	***Maximalan broj bodova***
Participation	2	25
Observational proposal	2	35
Report	2	40

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OPISI AKTIVNOSTI KOJE SE OCJENJUJU

The activity and participation at lectures and data taking will be evaluated.
The proposal will be evaluated as well as the report. Grades will be assigned to single proposals if the numbers of students will make possible to have more than one source to observe.
If one proposal only will be created, students will be graded depending on their participation in the project.

IV. DODATNE INFORMACIJE O PREDMETU

Pohađanje nastave

Attendance of classes is necessary. In case of problems in the attendance individual consultations can be agreed. Attending the scheduled observations in person at the Rijeka Observatory is an important part of the course so it would be highly recommended to participate, even if those observations will of course happen during the night.

Pridržavanje dogovorenih rokova

Partial grades on the Observational Proposal and on the Report will be communicated during the semester. Final grades will be assigned at the end of semester.

Ostale relevantne informacije

Students will learn to:

-Study the visibility of a source
-Prepare a multi-wavelength observational proposal
-Use the available tools for creating an observational strategy
-Analyze VHE gamma-ray data at a beginner level
-Analyze optical data at a beginner level
-Compare results and lightcurves from different telescopes