Course Unit Descriptor

Study Programme: Bachelor Academic Studies in Physics

Course Unit Title: Interstellar Medium

Course Unit Code: F18MSR

Name of Lecturer(s): Full Professor Tijana Prodanovic

Type and Level of Studies: Bachelor Academic Degree

Course Status (compulsory/elective): elective

Semester (winter/summer): Summer

Language of instruction: English

Mode of course unit delivery (face-to-face/distance learning): Face-to-face

Number of ECTS Allocated: 6

Prerequisites: None

Course Aims:

Interstellar medium is the starting point in stellar evolution as well as the cause of the radiation extinction, and thus every astronomer must poses knowledge about its main properties. The goal of this course is to introduce the students with the subject of the interstellar medium and to teach them about observational methods used to study this medium and which help us learn about its physical properties.

Learning Outcomes:

After the sucessfull completion of the course titled «Interstellar Medium» the students will be familiarized with the theory of interstellar medium and trained to make conlusions about its physical properties based on different observations.

Syllabus:

Theory

Definition and basic terms about the interstellar medium; Emission processes; Collisional ionization equilibrium; Continuum and recombination lines; Plasma cooling; Interstellar shock waves; Theory and parameters of the photo-ionized regions; Interstellar dust; Introduction to astrochemistry; Thermal phases

Practice

With the goal of solidifying the material covered in class, large attention will be given to practical work both during the lectures themselves, and in the form of homework. Students will be encouraged to analyze interstellar spectra and draw conclusions about its physical properties, as well as to solve problems in class which will help prepare them for homework problems and written exam.

Required Reading:

1. The Physics and Chemistry of The Interstellar Medium
2. A.G.G.M. Tielens, Cambridge University Press, ISB N 13978-0-521-82634-9, 2005.
3. J. Lequeux, The Interstellar Medium, Springer Berlin Heidelberg New York ISB N 3-540-21326-0

Weekly Contact Hours:	**Lectures:** 3	**Practical work:** 2

Teaching Methods:

Lectures, practical work and seminars

Knowledge Assessment (maximum of 100 points):			
Pre-exam obligations	points	**Final exam**	points
Active class participation	5	written exam	30
Practical work	15	oral exam	30
Preliminary exam(s)	20		
Seminar(s)			
The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.			