

COURSE SYLLABUS

University	Alexandru Ioan Cuza University of Iași	Course title	
Faculty	Physics	MODELS IN ASTRONOMY AND ASTROPHYSICS	
Department	Physics		
Domain	Physics	Course category (FC/SC/CC ¹): FC	Term (1-4): 4
Level	Postgraduate (MA)	Course type (Co/El/F ²): El	

I. Course structure

Number of hours/week				Credits	Total class hours/semester	Total hours of individual activity	Examination type (C/Ex/CE ³)	Teaching language
Course	Seminar	Lab.	Project	6	56	126	C	English
2	2							

II. Instructors

	Academic degree ⁴	Scientific degree	Name and surname	Faculty position (tenure/associate - organization)
Course	Prof.	Ph. D.	Ciprian Dariescu	Tenure/Al. I. Cuza University
Seminar	Prof.	Ph. D.	Ciprian Dariescu	Tenure/Al. I. Cuza University
Laboratory				

III. Prerequisites

Astrophysics and Cosmology (optional course, III),
Thermodynamics and Statistical Physics,
Optics and Spectroscopy, Plasma Physics

IV. Course objectives

It intends to supply a good knowledge on basics and main results of modern astronomy, astrophysics and cosmology. We shall develop the capacity of analyzing information from a large variety of bibliographic sources and a good research background for a correct understanding of the Universe.

V. Course content

Course	General Astronomy: Ephemerides and the Solar Systems, Basics of Astronomy and Stellar Astrophysics, Galactic Astronomy and Astrophysics. Extragalactic Astronomy: Galaxy Classification, Intergalactic distances. Cosmology: Big-Bang Theory of the Hot Universe, Inflation, Large Scale Structures, Wormholes and Parallel Universes. Modern Trends in Extra-dimensional Cosmology.
Seminar	Applications to the topics presented at the course; Initiation of students in using the telescope and software devoted to astronomy and astrophysics. Introduction to observational astronomy: Radio astronomy, infrared astronomy, optical astronomy, X-ray astronomy.
Laboratory	

VI. Minimal required references

¹ FC – fundamental course, SC – specialty course, CC – complementary course

² Co – compulsory, El – elective, F – facultative

³ C – colloquium, Ex – exam, CE – colloquium AND exam

⁴ Professor / Associate professor / Lecturer / Assistant professor / Teaching assistant

V. Ureche, *Universul. Astronomie*, Ed. Dacia, Cluj, 1982.
 E. Toma, *Introducere in astrofizica*, Ed. Tehnica, Bucuresti, 1980.
 N. Straumann, *General Relativity and Relativistic Astrophysics*, Springer-Verlag, 1984.
 S. Gottlober, *Early Evolution of the Universe and Formation of Structure*, Akademie Verlag, Berlin, 1990.
 Frank Hsu, *Physical Universe: An Introduction to Astronomy*, University Science Books, 1982.
 A.Unsold, B. Baschek, W.D. Brewer, *The New Cosmos: An Introduction to Astronomy and Astrophysics*, Springer, 2001.

VII. Didactic methods

Lectures,
 Thematic Debates,
 Applications,
 Observations

VIII. Assessment

Pre-conditions	Attendance, Active participation to class activities, Free presentation of a project, obtaining the minimal grade 5 for each ongoing assessment	
Exam dates	1st Assessment	April
	2nd Assessment	June

	Assessment means and methods	Percentage of the final grade
Exam/Colloquium	Oral	50%
Seminar	presentation of a project	50%
Laboratory		