

Level: bachelor				
Course title: Extragalactic astronomy and cosmology				
Status: elective				
ECTS: 6				
Requirements:				
Learning objectives Acquiring the basic and introductory knowledge about the Universe beyond the Milky Way, as well as about a wide spectrum of contemporary research topics in cosmology. This course aims at giving students a wide overview of the modern extragalactic research, as a precondition for subsequent advanced and more focused courses dealing with those topics.				
Learning outcomes Upon successful completion of this course, students will be familiar with the foundations of extragalactic astronomy and cosmology in both observational and theoretical domains.				
Syllabus <i>Theoretical instruction</i> The Universe beyond the Milky Way; the hierarchy of cosmic structures; large-scale structure, clusters and superclusters; active galactic nuclei; the cosmic microwave background radiations; cosmology as a worldview; classical Newtonian cosmology; Friedmann models; the Big Bang and steady state theories; standard cosmological model; the problem of structure formation; dark matter and dark energy. <i>Practical instruction</i> Solving the most important quantitative examples and problems. Presenting some of the relevant phenomena through numerical models. Discussion on the available on-line databases of interest for extragalactic astronomers and cosmologists, especially large contemporary galaxy catalogues, like the SDSS.				
Weekly teaching load				Other:
Lectures: 3	Exercises: 1	Other forms of teaching: 1	Student research:	