

Elective Advanced Lectures: Observational Astronomy - astro840

<i>Module No.</i>	astro840
<i>Category</i>	Elective
<i>Credit Points (CP)</i>	
<i>Semester</i>	1.-2.

Module: Elective Advanced Lectures: Observational Astronomy

Module Elements:

Nr	Course	Course No.	CP	Artkurz	Teaching hours	Semester
1	X-Ray Astronomy	astro8402	4	Lect. + ex.	2+1	ST
2	The Fourier-Transform and its Applications (OA)	FTA	4	Lect. + ex.	2+1	ST
3	Methods of Experimental Astrophysics (OA)	MethExpAstro	4	Lect. + ex.	2+1	ST
4	Active Galactic Nuclei (OA)	AGN	4	Lect. + ex.	2+1	ST
5	Astrophysics Courses from Cologne marked "OA"	see catalogue	4	see catalogue		WT/ST
6	Hydrodynamics and astrophysical magnetohydrodynamics	astro8403	4	Lect. + ex.	2+1	ST
7	Radiointerferometry: Methods and Science	astro8404	4	Lect. + ex.	2+2	ST
8	Internships in the Research Groups	astro831	4	internship		WT/ST
9	Selected 84* courses from catalogue	astro84*	3-6	see catalogue		WT/ST
10	Also possible classes from M.Sc. in Physics					
11	Radio Astronomy: Tools, Applications, Impacts	astro841	6	Lect. + ex.	3+1	WT
12	Submillimeter Astronomy	astro842	4	Lect. + ex.	2+1	WT
13	Astronomical Interferometry and Digital Image Processing	astro843	3	Lecture	2	WT
14	Observational Cosmology	astro845	4	Lect. + ex.	2+1	ST
15	Wave Optics and Astronomical Applications	astro846	3	Lecture	2	ST
16	Optical Observations	astro847	4	Lect. + ex.	2+1	ST
17	Galactic and Intergalactic Magnetic Fields	astro848	4	Lect. + ex.	2+1	ST
18	Multiwavelength Observations of Galaxy Clusters	astro849	4	Lect. + ex.	2+1	ST
19	Introduction to Hydro- and Magnetohydrodynamics	astro8401	3	Lecture	2	ST

Requirements for Participation:

Form of Examination: written examination

Content: This module covers all observational tools used in modern astronomy, over a wide range of the electromagnetic spectrum

Aims/Skills:

Observational astronomy shall be conveyed to the students by teaching the fundamentals of observational astronomical tools, along with relevant applications. These tools cover essentially the entire electro-magnetic spectrum, from radio wavelengths through X-ray energies. They naturally also encompass a wide range of astrophysical phenomena, including condensed matter (stars, neutron stars), the interstellar and intergalactic medium, galaxies and active galactic nuclei, and clusters of galaxies.

Emphasis is also on observational cosmology

Course achievement/Criteria for awarding cp's: see with the course

Length of Module: 1 semester

Maximum Number of Participants: ca. 100

Registration Procedure: s. <https://basis.uni-bonn.de> u. <http://bamawww.physik.uni-bonn.de>

Note: The students must obtain 18 CP in all out of the modules astro840 and astro850.