Primary Area of Specialization

Astrophysics

Module No.: MN-P-SP-Astro **status quo 08.05.2012**

	HPW	estimated effort (h)	credit points
Lecture Course	10	440	16
Problem Class	1	40	
Advanced Seminar	2	120	4
Total	13	600	20

Literature (for Astrophysics II, specialized courses need additional literature)
Binney and Merryfield, Galactic Astronomy (Princeton University Press)
Binney and Tremaine, Galactic Dynamics (Princeton University Press)
Carroll and Ostlie, An Introduction to Modern Astrophysics (Addison-Wesley)
Schneider, Einführung in die extragalaktische Astronomie & Kosmologie (Springer, Berlin)
Shu, The Physics of Astrophysics I & II (University Science Books, Mill Valley)
Tielens, The Physics and Chemistry of the Interstellar Medium (Cambridge University Press)
Unsöld and Baschek, Der neue Kosmos (Springer, Berlin)
Weigert and Wendker, Astronomie und Astrophysik (VCH Verlag)

Organization
The Primary AoS Astrophysics is composed of:

1. 1 core course Astrophysics II (4+1 hpw)
2. Specialized courses in Astrophysics and Molecular Physics (in total 6 hpw).
3. 3. 1 Advanced Seminar (2 hpw)

Examinations
The module is passed by passing an oral examination covering the topics of all attended courses. To be admitted to the exam, students must actively participate in the problem sessions (including the solution of homework problems) and present a scientific talk in the seminar course.
The grade given for the module is equal to the grade of the oral examination.

Aims
The student will gain the ability to apply fundamental concepts of physics to describe astrophysical phenomena and will obtain an overview of the experimental foundations of our knowledge about the cosmos. The courses will enable him to understand the fundamental principles of the universe and its history. The courses also give an introduction to topics of active research in astrophysics and thus prepares the students towards their own research activity within the master thesis.

Prerequisites for Participation
None

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Astrophysics at the level of the bachelor courses in physics is recommended; students without this background will have to put additional effort in reading some of the background literature.

Frequency
Astrophysics II is offered each winter semester, the advanced seminar is offered in each semester, the specialized courses are offered on a regular, alternating schedule which ensures that a sufficiently broad topical area is covered during the Master program.

Soft Skills
Elocution and public speaking

Use in Other Courses of Study
None

Coordinators
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