

Module No.:
Credit Points (CP):
Category:
Semester:

astro800
4
Required*
1.



Module: Introduction to Astrophysics

Module Elements:

Nr.	Course Title	Number	CP	Type	Workload	Sem.
1.	Introduction to Astrophysics	astro801	4	Lect. + tut. + ex.	180 hrs	WT

Requirements for Participation:

Form of Examination:

Content:

Introduction to Astrophysics to establish common standards at the start of the Masters programme

Aims/Skills:

The module brings the student up to the level required for the Master of Astrophysics programme. Students have to demonstrate adequate knowledge in astronomy at the introductory level and in advanced quantum theory.

Those who have demonstrated in the procedure for admission to the M.Sc. in Astrophysics programme to have one (or both) of these, are not required to take these courses

Course achievement/Criteria for awarding cp's:

Requirements for the premodule examination (written or oral examination): successful work with the exercises

Length of Module: 1 semester

Maximum Number of Participants: ca. 100

Registration Procedure:

Candidates for this module examination are registered by the examination board

*This Module is compulsory for students who have not had any introduction to astrophysics in their Bachelor study course.

Module: Introduction to Astrophysics

Module No.: astro800

Course: Introduction to Astrophysics

Course No.: astro801

Category	Type	Language	Teaching hours	CP	Semester
Required (see note on astro800)	Lecture with tutorial and exercises	English	2+1	4	WT

Requirements for Participation:

Preparation:

Form of Testing and Examination:

Requirements for the premodule examination (written or oral examination): successful work with the exercises

Length of Course:

1 semester

Aims of the Course:

Students with B.Sc. in Physics lacking sufficient introductory astronomy knowledge will be brought up to the level required for the Master in Astrophysics programme. Students need to acquire allowance to take this course upon admission to the M.Sc. in Astrophysics programme

Contents of the Course:

Celestial mechanics; Stars: photometric and spectroscopic measurements; Stellar structure: atmosphere, interior, nuclear fusion; Stellar evolution; Variable and binary stars; Star clusters, Interstellar medium: ionized gas, neutral and molecular gas, hot matrix, star formation, measurements; Galactic structure: distribution and motion of stars, galactic rotation, mass components, galactic evolution; Galaxies: types, distance determination, clustering; Cosmology: big bang, nucleosynthesis, expansion, dark matter, dark energy. Lecture will be supplemented by a tutorial, with relevant textbooks

Recommended Literature:

P. Schneider: Introduction to Extragalactic Astronomy and Cosmology, Springer (2006)

A. Unsöld, B. Baschek: The New Cosmos, Springer (1999)

Note: Participation will be decided by the Eligibility Assessment Board (student advisor for Astronomy), if the applicant exhibits lack of knowledge upon admission. Such students have to fulfill a total of 124 credit points of their master course.