Module: Introduction to Astrophysics

Module No.: astro800

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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.