Module Description 28-AA1 Astronomy and Astrophysics

Faculty of Physics

Version dated Feb 22, 2026

This module guide reflects the current state and is subject to change. Up-to-date information and the latest version of this document can be found online via the page

https://ekvv.uni-bielefeld.de/sinfo/publ/modul/275544995

The current and valid provisions in the module guide are binding and further specify the subject-related regulations (German "FsB") published in the Official Announcements of Bielefeld University.

28-AA1 Astronomy and Astrophysics

Faculty

Faculty of Physics

Person responsible for module

JProf. Dr. Alessandro Ridolfi

Regular cycle (beginning)

Every summer semester

Credit points

10 Credit points

Competencies

Non-official translation of the module descriptions. Only the German version is legally binding.

Students are familiar with the basic concepts, phenomena, observation and analysis methods of astronomy and astrophysics. They understand the interplay between theory, observation and data analysis. They are able to independently apply the basic knowledge they have learnt to problems in astronomy and astrophysics, formulate their own technical questions and find solutions. They can explain astronomical phenomena conclusively, even to non-experts.

Content of teaching

Coordinate systems and celestial mechanics
Astronomical instruments
The solar system
Stars: classification, evolution, variable and binary star systems
The interstellar medium
Galaxies: structure and evolution
Basics of cosmology

Recommended previous knowledge

Introduction to Physics I/II
Introduction to Physics III
Theoretical Physics I

Necessary requirements

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Explanation regarding the elements of the module

Module structure: 1 SL, 1 bPr [1]

Courses

Title	Type	Regular cycle	Workload [5]	LP[2]
Astronomy and Astrophysics	lecture	SoSe	150 h (60 + 90)	5 [Pr]
Tutorial on Astronomy and Astrophysics	exercise	SoSe	90 h (30 + 60)	3 [SL]

Study requirements

Allocated examiner	Workload	LP[2]
Teaching staff of the course **Tutorial on Astronomy and Astrophysics (exercise)** *Regular completion of the exercises (usually 50%), in each case with a recognisable and goal-oriented solution approach, as well as participation in the exercise groups (in particular: Presentation of own solutions or solution approaches, asking technical questions and critical discussion of the physical problems, working on attendance exercises).* *The exercises to be worked on will be issued one week in advance. The lecturer determines the exact criteria at the beginning of the course and announces them.*	see above	see above

Examinations

Allocated examiner	Type	Weighting	Workload	LP[2]
Teaching staff of the course **Astronomy and Astrophysics (lecture)** *Written exam (approx. 2-3 hours)* *Oral examination (approx. 30 minutes)* *The module examination covers the lecture and tutorial.*	Klausur o. mündliche Prüfung	1	60h	2

Legend

1	The module structure displays the required number of study requirements and examinations.
2	LP is the short form for credit points.
3	The figures in this column are the specialist semesters in which it is recommended to start the module. Depending on the individual study schedule, entirely different courses of study are possible and advisable.
4	Explanations on mandatory option: "Obligation" means: This module is mandatory for the course of the studies; "Optional obligation" means: This module belongs to a number of modules available for selection under certain circumstances. This is more precisely regulated by the "Subject-related regulations" (see navigation).
5	Workload (contact time + self-study)
SoSe	Summer semester
WiSe	Winter semester
SL	study requirement
Pr	Examination
bPr	Number of examinations with grades
uPr	Number of examinations without grades