



**LUND**  
UNIVERSITY

Faculty of Science

## **ASTB01, Astronomy: Introduction to Astrophysics, 7.5 credits**

*Astronomi: Introduktion till astrofysiken, 7,5 högskolepoäng*

First Cycle / Grundnivå

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### **Details of approval**

The syllabus was approved by Study programmes board, Faculty of Science on 2007-03-01 to be valid from 2007-07-01, autumn semester 2007.

### **General Information**

The course is an elective course for first-cycle studies for a Degree of Master of Science (120 credits) in astrophysics.

*Language of instruction:* Swedish and English

If needed, the course is given in English.

*Main field of studies*

Physics

*Depth of study relative to the degree requirements*

G2F, First cycle, has at least 60 credits in first-cycle course/s as entry requirements

### **Learning outcomes**

Upon completion of the course, the student should have acquired an overview of modern astronomy, its research methods and results, where physical laws are put into their context to give an overall picture of our present-day concept of the universe, its components and its origin and development. The student should at a general level be able to

- describe the night sky and its motion
- account for the sun and the planetary system, the properties and evolution of the stars, the space between the stars, the Milky Way and other galaxies and theories of the origin and development of the universe
- carry out calculations of distances to planets, stars and galaxies
- apply the acquired knowledge in problem-solving

have obtained training in

- performing independent exercises with associated written laboratory reports
- oral presentation of a smaller project
- use of computer networks and astronomical databases
- use of smaller telescopes for observation of objects in the night sky.

## Course content

The course gives a brief introduction to all fields of astronomy.

Overview of general fundamental concepts. The night sky and its motion. Astronomical instruments and observation techniques. The sun and the planetary system, exoplanets. The distances to the stars and their motion. The structure and evolution of stars. The space between the stars. The Milky Way and other galaxies. Theories of the origin and development of the universe.

## Course design

The teaching consists of lectures and laboratory sessions. Participation in laboratory sessions and thereto connected teaching elements is compulsory.

## Assessment

The examination consists of laboratory reports and a written examination at the end of the course. Students who do not pass the regular exam are offered a re-exam shortly after the regular exam.

*Subcourses that are part of this course can be found in an appendix at the end of this document.*

## Grades

Marking scale: Fail, Pass, Pass with distinction.

To pass the entire course, a passed examination, approved laboratory reports and participation in all compulsory course elements are required.

The final grade is determined by combining the results on the different parts of the course.

## Entry requirements

The prerequisites for admission to the course are: knowledge equivalent to FYSA31 (Physics 3, Modern physics), 30 credits.

## Further information

The course cannot be credited towards a degree together with AST201 Astronomi and astrofysik, 10p, AST202 Introduktionskurs, 5p, AST203 Astrofysikens grunder, 5p, ASTA11 Astronomi och astrofysik, 15 credits or ASTA01 Introduktionskurs, 7.5

credits.

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## Subcourses in ASTB01, Astronomy: Introduction to Astrophysics

Applies from H13

- 1301 Lab report I, 1,5 hp  
Grading scale: Fail, Pass
- 1302 Lab report II, 1,5 hp  
Grading scale: Fail, Pass
- 1303 Examination, 4,5 hp  
Grading scale: Fail, Pass, Pass with distinction

Applies from H07

- 0701 Introduction to Astrophysics, 7,5 hp  
Grading scale: Fail, Pass, Pass with distinction