



# SH2402 Astrophysics 6.0 credits

## Astrofysik

This is a translation of the Swedish, legally binding, course syllabus.

If the course is discontinued, students may request to be examined during the following two academic years

## Establishment

Course syllabus for SH2402 valid from Spring 2015

## Grading scale

A, B, C, D, E, FX, F

## Education cycle

Second cycle

## Main field of study

Physics

## Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

## Intended learning outcomes

After the course the student should be able to:

- Describe how fundamental astrophysical observations and measurements are performed: localisation, signal strength, distance scales. Plan and perform simpler astronomical observations and assess the outcome and give suggestions for improvements.

- By using physical reasoning, explain how radiation is transported within plasmas and in the universe. Explain how emission and absorption line features are formed and their diagnostics
- By using physical reasoning, explain the main evolutionary states for different types of stars.
- Describe the observations of the large-scale structure of the universe and assess the theories for structure formation in the universe on both small and large scales.
- Describe the various techniques for detection of extrasolar planets and discuss the conditions for life on other planets.
- Summarise the basis of astrophysics statistical analysis and solve basic problems.

## Course contents

Observational techniques, Radiative transfer, Star formation and stellar evolution and large-scale structure of the Universe, Astrostatistics

## Specific prerequisites

Recommended prerequisites: Previous knowledge of mathematical methods in physics and quantum physics.

## Course literature

Karttunen et al., Fundamental Astronomy

## Examination

- ANN1 - Notice, 1.0 credits, grading scale: P, F
- SEM1 - Seminar, 1.0 credits, grading scale: P, F
- TEN1 - Examination, 4.0 credits, grading scale: A, B, C, D, E, FX, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

## Other requirements for final grade

Written exam (TEN1; 4 university credits)  
 Observation (ANN1; 1 university credit)  
 Seminarium (SEM1; 1 university credit)

## Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.