EF2245 Space Physics II 7.5 credits

Rymdfysik II

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

Establishment

Grading scale

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

Education cycle

Second cycle

Main field of study

Electrical Engineering, Physics, Engineering Physics

Specific prerequisites

Knowledge in plasma physics, 6 credits, equivalent to completed course EF2200/EF2240.

Active participation in EF2200 or EF2240 during period 1 of the same academic year is considered equivalent to completion of the course. Registered students are expected and considered to be actively participating.

Intended learning outcomes

After passing the course, the student should be able to

- describe basic processes in space plasma physics
- describe and use established theories to estimate quantitatively the behaviour of some of these processes
- make analyses of various types of space physics data to compare with the quantitative theoretical predictions
- describe some of today's current problems in the field of space physics.

Course contents

- solar wind
- shocks and boundaries in space plasmas
- solar wind interaction with magnetized and unmagnetized bodies
- the ionosphere, creation and properites
- reconnection
- the magnetosphere and magnetopause of Earth
- particle drifts in the magnetosp
- auroral physics
- Alfvén waves

Examination

- INLB - Hand-in assignments, 7.5 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.

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

Transitional regulations

Course participants from 2025 and earlier who are approved in one of the TENA and INLA components are offered a home examination of the other component until 2027.

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.