EF2245 Space Physics II 7.5 credits

Rymdfysik II

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

The official course syllabus is valid from the autumn semester 2024 in accordance with the decision from the director of first and second cycle education: J-2024-0528.Decision date: 2024-04-05

Grading scale

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

Education cycle

Second cycle

Main field of study

Electrical Engineering,Engineering Physics,Physics

Specific prerequisites

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

Active participation in a course offering where the final examination is not yet reported in Ladok is considered equivalent to completion of the course.
Registering for a course is counted as active participation.

The term 'final examination' encompasses both the regular examination and the first re-examination.

Language of instruction

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

Intended learning outcomes

After passing the course, the student should be able to

- describe and explain basic processes in space plasma physics
- use established theories to estimate quantitatively the behaviour of some of these processes
- make simple 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

The material covered includes:

- shocks and boundaries in space
- solar wind interaction with magnetized and unmagnetized bodies
- reconnection
- sources of magnetospheric plasma
- magnetospheric and ionospheric convection
- auroral physics
- storms and substorms
- global oscillations of the magnetosphere

Examination

- INLA - Hand-in assignments, 2.5 credits, grading scale: A, B, C, D, E, FX, F
- TENA - Written exam, 5.0 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.

Transitional regulations

The former module TEN1 is replaced by both TENA and INLA.

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.