



# EF2245 Space Physics II 7.5 credits

## Rymdfysik II

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

## Establishment

Course syllabus for EF2245 valid from Autumn 2010

## Grading scale

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

## Education cycle

Second cycle

## Main field of study

Electrical Engineering, Physics, Engineering Physics

## Specific prerequisites

EF2240 Space Physics or EF2200 Plasma Physics or equivalent.

For single course students: documented proficiency in English B or equivalent.

## 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 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 hot topics of today's space physics research

## 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

## Course literature

Kivelson and Russel, Introduction to Space Physics.

## Examination

- TEN1 - Examination, 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.

## Other requirements for final grade

Written examination, hand-in assignments.

## **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.