



LT1044 Space and sustainable development for active teachers and educators 3.0 credits

Rymden och hållbar utveckling för verksamma lärare och pedagoger

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

Establishment

The official course syllabus is valid from the summer semester 2025, according to the decision by the Faculty Board: HS-2025-0013. Date of decision: 2025-01-15

Grading scale

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

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

No specific prerequisites

Language of instruction

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

Intended learning outcomes

The course intends to develop the participants' skills in pedagogy and didactics to teach about space and sustainable development in STEM subjects.

After passing the course, the student should be able to:

- give an account of basic concepts and phenomena within the area of space and sustainable development
- discuss how students can be introduced to current societal issues where space and sustainable development are of great importance
- give an account of, and problematise, general didactic aspects of STEM subjects
- orientate themselves in current practices and didactic research in basic STEM teaching revolving around a space theme
- analyse relevant course syllabi and subject syllabi to identify elements and contents where knowledge within the areas of space and sustainable development can be applied.
- plan and evaluate teaching for pupils about sustainable development, revolving around a space theme, in one or more STEM subjects.

Course contents

Space-related science and technology that can be used for teaching for sustainable development, e.g. satellite data, earth observations, environmental technology. Science and technology that can be used in fields such as sustainable space cities or space stations, cultivation technology, purification technology, and materials science. Didactic aspects for interdisciplinary teaching in space and sustainability, especially how the teacher can introduce societal issues and let pupils take stance based on complex situations.

In this digital professional development course, space is a place of inspiration and dreams for the future, and an everyday aspect of modern life. Students meet space experts, scientists and astronauts, and also try using real space data and apply real scientific methods. The course deals with facts and discussions on how the UN Sustainable Development Goals can be achieved, as well as didactics for teaching this topic.

As a teacher or educator, you are encouraged to use space-related themes and young people's genuine fascination with space to improve school students' competences in STEM-related subjects when you carry out a practical project with your students.

The course is an online course.

- Lectures by researchers with connections with space and sustainable development and people in the network of ESERO Sweden
- Seminars and discussions about space and sustainable development

- Development of an outline for a series of space-themed lessons on sustainable development. The lessons can be planned within a STEM course of your choice or as an interdisciplinary collaboration within the secondary school.

Examination

- SEM1 - Seminars, 1.0 credits, grading scale: P, F
- INL1 - Hand-in assignment, 2.0 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.

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

Other requirements for final grade

Compulsory attendance. Occasional absences can be complemented.

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.