

Our Changing Planet

Vår planet i förändring

7.5 credits

Single subject and programme course

746A89

Valid from: 2026 Autumn semester

Determined by	Main field of study	
Course and Programme Syllabus Board at the Faculty of Arts and Sciences	Environmental Science	
Date determined	Course level	Progressive specialisation
2020-11-04	Second cycle	A1N
Revised by	Disciplinary domain	
Chairman of the Course and Programme Syllabus Board at the Faculty of Arts and Sciences	Natural sciences	
Revision date	Subject group	
2025-08-12; 2025-12-17	Environmental Science	
Offered first time	Offered for the last time	
Autumn semester 2021		
Department	Replaced by	
Institutionen för Tema		

Course offered for

- Master's Programme in Science for Sustainable Development

Entry requirements

- 150 credits of which 90 credits with progressive deepening within one main field of study.
- English corresponding to the level of English in Swedish upper secondary education (Engelska 6 or Engelska nivå 2).
Exemption from Swedish

Intended learning outcomes

After completion of the course, the student should on an advanced level be able to:

- Investigate the implications of how the Earth is viewed and known as a system
- Discuss structures and functions of Earth systems, including physical, chemical, and biological sub-systems,
- Describe and apply fundamental concepts of drivers and trends of environmental change,
- Analyse how earth system processes relate to sustainability challenges and global environmental changes.
- Critically evaluate design and methodology for studying earth system processes and environmental changes.
- Communicate the relevant knowledge within earth system processes and environmental changes orally and in text.

Course content

The course explores the ways in which the Earth continually changes through complex interrelationships between energy, matter and human activities in the fluid, solid and living Earth. The course will begin by investigating how the Earth is viewed and known as a system and related implications for how global environmental problems are represented. Fundamental processes related with biogeochemical cycles, feedback loops, regulation and sustainability will be analyzed. A critical evaluation of these processes and interactions will be undertaken to determine their role in global environmental changes and to what extent they link with sustainability challenges and planetary boundaries. The course examines how Earth system changes are studied, monitored and estimated.

Teaching and working methods

Teaching and working methods include lectures, laboratory activities, seminars, group works and written individual and group assignments. In addition, students undertake self-studies.

Examination

The course is examined through:

- active participation in seminars and laboratory works. Grading scale: Pass/Fail
- group written assignments, presentation and opposition. Grading scale: Pass/Fail
- individual written assignment. Grading scale: ECTS

For a final passing grade (E) on the course, Pass grade is required for active participation in seminars and laboratory works and for group written assignments, presentation and opposition as well as at least E for the individual written assignment. Higher grade will be based on the individual written assignment.

Detailed information can be found in the course handbook.

If special circumstances prevail, and if it is possible with consideration of the nature of the compulsory component, the examiner may decide to replace the compulsory component with another equivalent component.

If the LiU coordinator for students with disabilities has granted a student the right to an adapted examination for a written examination in an examination hall, the student has the right to it.

If the coordinator has recommended for the student an adapted examination or alternative form of examination, the examiner may grant this if the examiner assesses that it is possible, based on consideration of the course objectives.

An examiner may also decide that an adapted examination or alternative form of examination if the examiner assessed that special circumstances prevail, and the examiner assesses that it is possible while maintaining the objectives of the course.

Students failing an exam covering either the entire course or part of the course twice are entitled to have a new examiner appointed for the reexamination.

Students who have passed an examination may not retake it in order to improve their grades.

Grades

ECTS, EC

Other information

Planning and implementation of a course must take its starting point in the wording of the syllabus. The course evaluation included in each course must therefore take up the question how well the course agrees with the syllabus.

The course is conducted in such a way that there are equal opportunities with regard to sex, transgender identity or expression, ethnicity, religion or other belief, disability, sexual orientation and age.

If special circumstances prevail, the vice-chancellor may in a special decision specify the preconditions for temporary deviations from this course syllabus, and delegate the right to take such decisions.

About teaching and examination language

The teaching language is presented in the Overview tab for each course. The examination language relates to the teaching language as follows:

- If teaching language is “Swedish”, the course as a whole could be given in Swedish, or partly, or as a whole, in English. Examination language is Swedish, but parts of the examination can be in English.
- If teaching language is “English”, the course as a whole is taught in English. Examination language is English.
- If teaching language is “Swedish/English”, the course as a whole will be taught in English if students without prior knowledge of the Swedish language participate. Examination language is Swedish or English depending on teaching language.