



## MESB01, Earth Systems Science, 10 credits

*Biogeovetenskap, 10 högskolepoäng*

First Cycle / Grundnivå

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### Details of approval

The syllabus was approved by The Board of the Lund University Centre for Sustainability Studies on 2013-10-22 to be valid from 2013-08-28, autumn semester 2013.

### General Information

The main field of study is *Environmental Studies and Sustainability Science*. The course constitutes the 1st course at LUMES, Lund University International Master's Programme in Environmental Studies and Sustainability Science.

It is compulsory for all LUMES students.

*Language of instruction:* English

*Main field of studies*

Environmental Studies and Sustainability Science

*Depth of study relative to the degree requirements*

G2F, First cycle, has at least 60 credits in first-cycle course/s as entry requirements

### Learning outcomes

On completion of the course, the student shall demonstrate:

- a capacity to explain the structure and function of the Earth system, including its physical, chemical, and biological subsystems, as well as human drivers and trends, and how these relate to sustainability challenges such as climate change, land use change, biodiversity loss, and global freshwater use;
- a capacity to understand the scientific research process, including such aspects as problem formulation, analytical reasoning, experimental design, data collection and analysis, and presentation orally and in writing;
- the ability to use appropriate tools and methods to visually and statistically represent, analyze, and interpret quantitative data related to sustainability challenges;
- skills in academic writing, the independent use of academic libraries and resources, including bibliographic databases, to critically evaluate, process and

This is a translation of the course syllabus approved in Swedish

- compile information as needed, and skills in leadership, communication, and effective group work in a multi-cultural setting.

## Course content

The course covers the following key issues within Earth Systems Science:

- Drivers and consequences of global environmental change
- Ecosystem structure and function, including biodiversity
- Land use change, including forests and agriculture
- Global freshwater use, including the global water cycle
- Nutrient (nitrogen and phosphorous) use and pollution
- Earth's physical climate system and anthropogenic climate change

The course offers training in the following skills:

- Academic writing
- Quantitative data analysis
- Using academic libraries
- Using data bases
- Practice in oral presentations
- Group work management

A pre-course assignment dealing with an important sustainability problem is presented both in a short paper and orally.

## Course design

The course is comprised of lectures, seminars, fieldwork, group discussions, students' presentations, individual assignments/papers, and a written exam.

## Assessment

Assessment is carried out by means of evaluation of

1. The individually conducted assignment/s.
2. The written exam.

Consistent, regular class attendance and fully engaged participation is expected from all students in LUMES. Attendance at the sessions where graded course activities take place is compulsory to pass the course.

For a passing grade the student must (a) have an overall passing mark on the individual assignments; (b) have an overall pass on combined group work and individual assignments; (c) have participated in the mandatory sessions;

Students who fail a test have the right to re-examination. An opportunity for re-examination will be offered after the end of the course. If necessary, a second re-examination will be arranged at a later date. A student who has taken two examinations in a course or a part of a course without obtaining a passing grade is entitled to the nomination of another examiner, unless there are special reasons to the contrary. Students getting a pass mark cannot re-take an exam or re-submit a paper to get a higher grade.

*Subcourses that are part of this course can be found in an appendix at the end of this document.*

## Grades

Marking scale: Fail, Three, Four, Five.

The grades awarded in examinations are 5-4-3-Fail. The highest grade is 5 and the lowest passing grade is 3. The grade for a non-passing result is Fail. The student's performance is assessed with reference to the learning outcomes of the course. The grade "5" denotes outstanding performance in *all* learning outcomes. The grade "4" signifies very good performance in *all* learning outcomes. To receive the grade of "3", the student must obtain minimum criteria in fulfilling *all* learning outcomes. The grade of Fail signifies that the student has not fulfilled the learning outcomes of the course, or that additional work is required before the credit can be awarded.

## Entry requirements

Admittance to the LUMES programme is required for admittance to the course.

## Further information

This course cannot be included in a degree together with MESA01.

The syllabus was approved by the Board of the Faculty of Social Sciences, Lund University, on December 13, 2012.

## Subcourses in MESB01, Earth Systems Science

Applies from H13

1201 Earth Systems Science, 10,0 hp  
Grading scale: Fail, Three, Four, Five