

Syllabus

for course at advanced level

Systems Theory and Resilience Thinking
Systemteori och resilienstagande

**15.0 Higher Education
Credits**
15.0 ECTS credits

Course code:	BL8049
Valid from:	Autumn 2011
Date of approval:	2010-08-20
Department	Department of Biology Education
Main field:	Social-Ecological Resilience for Sustainable Development
Specialisation:	A1F - Second cycle, has second-cycle course/s as entry requirements

Decision

This syllabus has been approved by the Board of the Faculty of Science at Stockholm University.

Prerequisites and special admittance requirements

Admission to the course requires knowledge equivalent to Social-ecological systems: challenges and approaches 15 credits. Swedish upper secondary school course English B/English 6 or equivalent.

Course structure

Examination code	Name	Higher Education Credits
8049	System theory and resilience thinking	15
8A49	Systems thinking	4
8B49	Regime shifts and transformation	4
8C49	Resilience thinking	7

Course content

This course introduces qualitative and quantitative approaches to systems theory, and shows how they can be applied in to analyze social-ecological systems. Regime shifts, the reorganization of the structure and processes shaping a social-ecological system, are explored from a theoretical and practical perspective, including the investigation of a set of case studies. Resilience thinking uses systems concepts to understand such abrupt changes. Key resilience concepts will be introduced. Students will be introduced to theoretical concepts, methods for analysis, and conduct group and individual research projects that utilize these concepts and methods.

The course includes the following three elements:

- I: Systems thinking (4hp),
- II. Regime shifts (4hp),
- III. Resilience thinking (7hp).

Learning outcomes

It is expected that the student, after taking the course, will be able to:

- understand basic systems concepts and be able to apply basic systems analysis approaches
- understand the concept of regime shifts and be familiar with a number of examples of regime shifts
- define and apply concepts of resilience, adaptive cycle, and panarchy to social-ecological systems
- analyze how human action can alter the resilience of a regime shift.

Education

The education consists of lectures, group exercises and seminars

Participation in group exercises, seminars and group education associated with this is compulsory. An examiner may rule that a student is not obliged to participate in certain compulsory education if there are special grounds for this after consultation with the relevant teacher.

Forms of examination

a. Examination for the course is in the following manner: measurement of knowledge takes place through: Written and/or oral presentations and activity at seminars.

b. Grading is carried out according to a 7-point scale related to learning objectives:

A = Excellent

B = Very Good

C = Good

D = Satisfactory

E = Sufficient

Fx = Fail

F = Fail

c. Grading criteria for the course will be distributed at the start of the course.

d. A minimum grade of E is required to pass the course, together with:

- participation in all compulsory education

e. Students who fail to achieve a pass grade in an ordinary examination have the right to take at least further four examinations, as long as the course is given. The term “examination” here is used to denote also other compulsory elements of the course. Students who have achieved a pass grade on an examination may not retake this examination in order to attempt to achieve a higher grade. Students who have failed to reach a pass grade on two occasions have the right to request that a different teacher be appointed to set the grade of the course. A request for such appointment must be sent to the departmental board.

Interim

Students may request that the examination is carried out in accordance with this syllabus even after it has ceased to apply. This right is limited, however, to a maximum of three occasions during a two-year-period after the end of giving the course. A request for such examination must be sent to the departmental board.

Limitations

The course can not be included in a degree together with the courses Natural Resource Management, Governance and Globalization 40 p (BI4660) and Natural Resources and Society 15 hp (BL7013) or the equivalents.

Misc

The course is a component of the Master's Programme in Resilience in Social-Ecological Systems, and it can also be taken as an individual course.

Required reading

Course literature is decided by the departmental board and is described in an appendix to the syllabus.