

Syllabus

for course at advanced level

Land-Water Risk Assessment and Management Methods **15.0 Higher Education**
Riskbedömnings- och förvaltningsmetoder för mark- och vattenresurser **Credits**
15.0 ECTS credits

Course code: GE8031
Valid from: Spring 2020
Date of approval: 2019-08-19
Department: Department of Physical Geography

Main field: Physical Geography and Quaternary Geology
Specialisation: A1F - Second cycle, has second-cycle course/s as entry requirements

Decision

This syllabus has been approved by the Board of Science at Stockholm University 2019-08-19.

Prerequisites and special admittance requirements

Admission to the course requires knowledge equivalent to the course Local to Global Water Vulnerability and Resilience, 15 ECTS credits (GE7025). Also required is knowledge equivalent to Swedish upper secondary school course English 6.

Course structure

Examination code	Name	Higher Education Credits
DEL1	Water Resources Management	7.5
DEL2	Pollutant Transport and Environmental Management	7.5

Course content

- a. The course includes
- methods for integrated water resources and environmental management
 - International environmental legislation for integrated water resources and environmental management
 - ecological economics and its application to water resources and environmental management
 - assessment and management of uncertainty, probability and risk in water systems

b. The course consists of the following course units:

1. Water Resources Management 7.5 ECTS credits

This unit includes problem solving of cases dealing with water resources based on examples from research articles. The course also covers ecological economics applied to the water resources management.

2. Pollutant Transport and Environmental Management 7.5 ECTS credits

This unit includes the modeling of mass flows of pollutants in hydrological basins. The course also covers European environmental legislation dealing with water-borne pollution.

Learning outcomes

Upon completion of the course, students are expected to be able to:

- identify and compile in relevant model systems the flows of water, solutes and pollutants that integrate water and socio-economic systems, and explain and categorize the main methods and constraints for the quantification and these flows (Course units 1, 2)
- identify and explain key natural and technological implications of policies, policy instruments and

management of water resources and the environment (Course units 1, 2)

- explain the needs and distinguish and compare different methods for quantifying and managing uncertainty, probability and risk in policy and legislation of water resources and environmental management (Course unit 2)

Education

The education consists of lectures, seminars, exercises, project work and presentations.

Participation in seminars, project work and exercises, and any associated integrated instruction is compulsory. In the event of special circumstances, the examiner may, after consultation with the teacher concerned, grant a student exemption from the obligation to participate in certain compulsory instruction.

Instructions are in English.

Forms of examination

a. The course is examined as follows: Knowledge assessment takes the form of:

- Written examination (Course units 1, 2)
- written examination presentations of project work (Course units 1, 2)
- written examination of exercises (Course units 1, 2)

Examination is in English.

b. Grades will be set according to a seven-point scale related to the learning objectives of the course:

A = Excellent

B = Very good

C = Good

D = Satisfactory

E = Adequate

Fx = Fail, some additional work required

F = Fail, much additional work required

The course unit 1 will be graded according to a two-point scale: Pass (G) or Fail (U).

c. The grading criteria will be distributed at the beginning of the course.

d. In order to pass the course, students must receive a passing grade on all course units and participate in all mandatory instruction.

The final grade on the course is determined by weighting the grades from all course units, where each grade is weighted in relation to the scope of the course unit.

e. Students who receive a failing grade on a regular examination are allowed to retake the examination as long as the course is still provided. The number of examination opportunities is not limited. Other mandatory course elements are equated with examinations. A student who has received a passing grade on an examination may not retake the examination to attain a higher grade. A student who has failed the same examination twice is entitled to have another examiner appointed, unless there are special reasons to the contrary. Such requests should be made to the department board.

The course includes at least two examination opportunities per year when the course is given. At least one examination opportunity will be offered during a year when the course is not given.

f. Students awarded the grade Fx are given the opportunity to improve their grade to E. The examiner decides the supplementary assignments to be performed and the pass mark criteria. The supplementary assignments will take place before the next examination session.

Interim

Students may request that the examination be conducted in accordance with this course plan even after it has ceased to be valid. However, this may not take place more than three times over a two year period after course instruction has ended. Requests must be made to the departmental board. The provision also applies in the case of revisions to the course plan and the revisions of the course literature.

Limitations

The course may not be included in examinations in combination with courses Integrated Land-Water Systems (NK3280), Land-Water Risk Assessment and Management Methods (GE8009) or equivalent.

Misc

The course is part of the Master's Programme in Hydrology, Hydrogeology and Water Resources but can also be read as a separate course.

Required reading

The course literature is decided by the department board and published on the Department of Physical Geography's website at least two months before the start of the course.