

# Syllabus

for course at advanced level

**Local to Global Water Vulnerability and Resilience**  
**Vattenresursers sårbarhet och resiliens, lokalt till globalt**

**15.0 Higher Education**  
**Credits**  
**15.0 ECTS credits**

<b>Course code:</b>	GE7025
<b>Valid from:</b>	Autumn 2010
<b>Date of approval:</b>	2006-09-27
<b>Changed:</b>	2010-05-17
<b>Department</b>	Department of Physical Geography
<b>Main field:</b>	Physical Geography and Quaternary Geology
<b>Specialisation:</b>	A1N - Second cycle, has only first-cycle course/s as entry requirements

## Decision

This syllabus has been approved by the Board of the Faculty of Science at Stockholm University on 27 September 2006 and revised 25 October 2007, 17 September 2008 and 17 May 2010.

## Prerequisites and special admittance requirements

Admission to the course requires knowledge equivalent to at least 90 ECTS credits in Earth sciences, geography, biology-earth sciences, environmental sciences or equivalent science or civil engineering competence is required. Swedish upper secondary school courses Mathematics D and at least 7,5 ECTS credits in Statistics. Swedish upper secondary school course English B/English 6.

## Course structure

Examination code	Name	Higher Education Credits
MOM1	Theory	1
MOM2	Seminars and Computer Exercises	1
STU1	Case Study 1	7
MOM5	Case study 2	6

## Course content

a. The course is based on case studies. Such analyzes are required many professional situations since many different social, environmental and industrial problems are directly related to water issues. These issues are, for instance, on the agenda in international conflict management, environmental management by governmental agencies, environmental policy, and industrial and agricultural impact assessments. The course covers:

- Water resources and water quality: regional to global changes and differences of availability of and demand for clean freshwater, transboundary national and international water resource management, environmental policies, interest conflicts and dialog processes.
- Water quantity: water availability, water supply, water balance, relations to energy supply, agriculture, industry, safety, climate change and ecosystems
- Water pollution: different types of water pollution, point sources and diffuse sources, pollution transport by and in different water and soil systems, physical/chemical/biological reactions and natural purification along transport pathways.

b. The course comprises the following elements:

1. Theory 1 ECTS credits

2. Seminars and computer exercises 1 ECTS credits
3. Case study 1 7 ECTS credits
4. Case study 2 6 ECTS credits

### **Learning outcomes**

After the course, students are expected to:

- relate and estimate relations between upstream water abstraction, pollutions and measures and downstream effects on water availability and water quality
- identify, extract and combine relevant information and data for analysis and estimation of water quantity and water quality issues on local, regional and global scale
- relate physical, chemical and geographical relations between upstream and downstream water bodies to national and international policies and management of water resources (including dialog and conflict-avoiding strategies)

### **Education**

Instruction consists of lectures, exercises, (computer) exercises, seminars and project work.

Participation in seminars, exercises and project work, 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.

### **Forms of examination**

a. The course is examined as follows:

Measurement of knowledge for elements 3 and 4 takes place through • written and/or oral examination  
• written and/or oral presentations of project work.

b. Grades are assigned according to a seven-point goal-related grading scale:

A = Excellent

B = Very good

C = Good

D = Satisfactory

E = Sufficient

Fx = Fail (more work required before credit can be awarded)

F = Total fail

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

d. To be awarded a pass, the minimum grade E is required and:

- pass of elements 1 and 2
- participation in all compulsory education.

e. Students who fail an ordinary examination are entitled to sit additional examinations as long as the course is offered. There is no restriction on the number of examinations. Examinations also include other obligatory elements of the course. Students who have passed an examination may not resit it in order to achieve a higher grade. Students who have failed on two occasions are entitled to request the appointment of a different examiner for the next examination. Any such request must be made to the departmental board.

### **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.

### **Limitations**

The course may not be included in examinations in combination with courses Soil and water (NG8430) and Water Resources and Water Conflicts (NK3020)/Water Resources, Water Cooperation and Water Conflicts (NK3920), 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**

Course literature is decided by the departmental board and described thereafter in an appendix to the course

plan.