

## Syllabus

for course at second level

**Vattenresurser och hållbarhet**  
**Water Resources Sustainability**

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

<b>Course code:</b>	GE7094
<b>Valid from:</b>	Autumn 2024
<b>Date of approval:</b>	2023-12-14
<b>Changed:</b>	2024-01-22
<b>Department:</b>	Department of Physical Geography
<b>Subject group:</b>	Earth Science and Physical Geography
<b>Specialisation:</b>	A1N - Second cycle, has only first-cycle course/s as entry requirements
<b>Main field:</b>	Physical Geography and Quaternary Geology

### Decision

Finalized by: Områdesnämnden för naturvetenskap, 2023-12-14

### Prerequisites and special admittance requirements

Admission to the course requires knowledge equivalent to 90 credits in any of the major subjects biology-earth sciences, geography, earth sciences or environmental sciences.

Or knowledge equivalent to the courses Globalization, Environment and Social Change, 15 credits (KG7242) and Global Climate and Environmental Change, 15 credits (GE7063).

Or knowledge equivalent to the course Systems analysis for environmental management, 15 credits (GE7093).

Also required is knowledge equivalent to Swedish upper secondary school course English 6.

### Course structure

Examination code	Name	Higher Education Credits
HELA	Water Resources Sustainability	15.0

### Course content

This course addresses:

- Different policy and sustainability frameworks dealing with the sustainability of human water use and consumption, the mitigation of impacts to scarce water resources and the resilience of the freshwater system to hydroclimatic change and human impacts.
- Dynamic system and/or hydrological modelling of water use and allocation between several competing sectors (energy, food, household, industry) and ecosystems.

- Environmental Impact Assessment of a large hydropower project.
- Dynamic system modelling with a focus on feedback mechanisms and tipping points within climate systems and hydrological systems.

## **Learning outcomes**

After completing the course, the student is expected to be able to:

- identify, extract and combine relevant information and data for analysis and estimation of water quantity availability on local, regional and global scales.
- explain the principles behind the sustainability and resilience of water resources and the water system from local to global scales.
- determine the environmental and hydrological feasibility of water infrastructure projects.
- estimate and quantify the allocation and availability of water, based on dynamic focusing on the efficient and sustainable allocation of water between competing interests.
- Perform simple hydrological modelling in a river basin, estimating water flux components.

## **Education**

Teaching consists of lectures, exercises, computer laboratory sessions, workshops, seminars, and project work.

The course is offered in English.

## **Forms of examination**

a. The course is examined as follows: Assessment takes place through written reports and oral presentations, lab reports and active participation in seminars.

The examiner can decide on adapted or alternative examination formats for students with disabilities.

Late submission of take-home examinations has consequences for the final grade of the course. These consequences are described in detail in the grading criteria of the course.

The examination will be conducted in English.

b. A passing final grade requires participation in seminars, exercises and laboratory sessions. If special reasons exist, following consultation with the teacher involved, the examiner may grant the student exemption from the obligation to participate in certain compulsory instruction.

c. Grading: The course's final grade is set according to a seven-point criterion-referenced scale:

A = Excellent

B = Very good

C = Good

D = Satisfactory

E = Adequate

Fx = Failed, some additional work is required

F = Failed, much additional work is required

d. The course's grading criteria are handed out at the start of the course.

A passing final grade requires passing grades on all included parts.

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 three examination opportunities per academic year the course is offered. For the academic years that the course is not offered, at least one examination opportunity is offered.

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

### **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 the course was discontinued. Requests must be made to the departmental board. The provision also applies in the case of revisions of the course syllabus and revisions of the required reading.

### **Limitations**

This course may not be included in a degree together with the courses Soil and water (NG8430), Water resources and water conflicts (NK3020), Local to Global Water Vulnerability and Resilience (GE7025), Water Resources Sustainability (GE7086), Land-Water Risk Assessment and Management Methods (GE8031) or with equivalent courses.

### **Misc**

This course is offered as a separate course.

The required reading is decided by the department board and published on the website of the course at least

2 months before the start of the course.