



MJ191V Sustainable Energy and Water Systems in a Global Perspective 7.5 credits

Hållbara energi- och vattensystem i ett globalt perspektiv

This is a translation of the Swedish, legally binding, course syllabus.

If the course is discontinued, students may request to be examined during the following two academic years

Establishment

Course syllabus for MJ191V valid from Autumn 2008

Grading scale

P, F

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

Basic academic qualifications (finished upper secondary school or corresponding, including Swedish and English). The course literature is in English.

Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

Intended learning outcomes

The objectives of the course are to give the students an improved insight into the current global situation with respect to energy and water supply and to establish a sustainable combination of supply and use of these resources in the future. After taking the course, the student is expected to be able to (i) describe existing global, regional and local threats to a sustainable energy and water supply and use, (ii) explain which of supply methods we may realistically count on in the future and (iii) understand important and describe the most important energy and water saving measures we may count on in the future. An important cross-cutting objective is to give the student a broader insight into the different world views that exist in the rich and poor parts of the world, both with respect to the way society works today and how one may approach existing problems in a realistic way and support sustainable development.

Course contents

Introductory lectures on (i) global aspects of sustainable development, (ii) the global energy situation and (iii) The global water situation. After this, the student will read and analyse the course literature covering (i) developing country view on the global environmental situation, (ii) a description and analysis of the existing and potential social tensions between rich and poor countries, (iii) a description and analysis of the global challenges in reaching a sustainable supply and use of energy and water. The course will also cover economic mechanisms for financing of energy- and water projects in the developing world and different threats to future conflicts with respect to energy and water issues.

Disposition

Course is given at a speed of 50 % of full time studies. It will be necessary to be present at KTH on three different occasions. Otherwise, the course may be followed at a distance.

The course language is Swedish.

The practical implementation of the course is as follows:

- A first introductory day at KTH with course information and three introductory lectures according to above.
- Individual reading of the course literature.
- Preparation and submission by e-mail of three short (2 page) analyses (one for each of the three course books) on the course literature.
- Participation in an intermediary Seminar at KTH for follow-up of the literature studies and preparation of written analyses on the course literature.

- Submission by e-mail of an individual home examination on the course content.
- Active participation in a final Seminar at KTH where the course content and the reflections written are presented and discussed.

Course literature

Martinez-Alier, J. (2002) *The Environmentalism of the Poor - A Study of Ecological Conflicts and Valuation* New Delhi, Oxford University Press, 2005. Smil, V. (2003) *Energy at the Crossroads – Global Perspectives and Uncertainties*, Massachusetts Institute of technology, MIT press. McDonald, B & Jehl, D. (Eds; 2003) *Whose water is it? The unquenchable thirst of a water-hungry world*, National Geographic Society, Washington DC.

Equipment

Computer with Internet connection

Examination

- TEN1 - Examination, 3.0 credits, grading scale: P, F
- ÖVN1 - Exercises, 4.5 credits, grading scale: P, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

The examination is taking place continuously during the course with writing of individual analyses and a final computer based home examination.

Other requirements for final grade

- Participation at KTH in at least the introductory day and final seminar.
- Reading of the course literature and preparation of three approved short written analyses (appr 2 pages each).
- Submission of a written home examination that is approved in its demonstration of acquired knowledge of the course subject.

Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.

- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.