AL2110 Sustainable Food Production and Consumption 7.5 credits

Hållbar livsmedelsproduktion och konsumtion

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

Establishment

Course syllabus for AL2110 valid from Autumn 2018

Grading scale

A, B, C, D, E, FX, F

Education cycle

Second cycle

Main field of study

Environmental Engineering, Mechanical Engineering

Specific prerequisites

At least 150 academic credits (ECTS) in a programme of engineering or natural science or the course MJ2615 Introduction to Industrial Ecology or equivalent.

Language of instruction

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

Intended learning outcomes

After finishing the course, the student should be able to:

- describe and discuss the sustainability of alternative food and farming systems;

- discuss the pros and cons of a Circular Food System;

- assess a current food system challenge with a hard (i.e. quantitative) systems approach;

- model nutrient stocks and flows of a selected system, as well as their disruption;

- compare the relative merits of a bio-based production systems with those of a fossil-based production systems (e.g. organic vs. conventional farming); and

- reflect upon one's own state of knowledge and identify additional information needs and skill development, and reflect upon one’s own abilities, strengths and weaknesses both in science and as a professionally active person and work team member.

Course contents

The course aims to show alternative food systems and the complexisties associated with these. The course demonstrates the benefits of closing the loop (e.g. nutrient and water cycles) in food systems (e.g. in agriculture and waste management like biowaste composting. Topics covered include: bioeconomy and agroecology, disturbance of stocks and flows in the anthroposphere and the implications of perturbing global biogeochemical cycles on environmental change, food security, trade.

• Circularity in Bioeconomy vs. Fossil Economy

• Global Cycles (Energy, Water, Biogeochemical: Carbon, Nitrogen, Phosphorus, Methane, Phosphorus, Sulphur)

• Human Appropriation of Stocks and Flows

• Ecosystem Services

• Life Cycle Assessment

Disposition

• ATT1 - Attendance, 1.0 , grade scale: P, F

• PRO1 - Project, 5.0, grade scale: A, B, C, D, E, FX, F

• RED1 - Assessment, 1.5, grade scale: P, F

Course literature

To be described before course start

Equipment

The course uses KTH's learning management system (LMS) as an important support. A computer with internet and e-mail and the possibility to use Word and Excel (Microsoft version recommended) and to read pdf- files is necessary. Other software (e.g. STAN) that is needed in the course will be downloadable from the internet or from the LMS or made available on KTH computers.

Examination

- PRO1 - Project, 5.0 credits, grading scale: A, B, C, D, E, FX, F
- RED1 - Assessment, 1.5 credits, grading scale: P, F
- ATT1 - Attendance, 1.0 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.

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

Other requirements for final grade

- ATT1 - Attendance, 1.0 , grade scale: P, F
- PRO1 - Project, 5.0, grade scale: A, B, C, D, E, FX, F
- RED1 - Assessment, 1.5, grade scale: P, F

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.