AL2110 Hållbar livsmedelsproduktion och konsumtion 7,5 hp

Sustainable Food Production and Consumption

Kursplan för AL2110 gäller från och med VT16

**Betygsskala:**

- Utbildningsnivå: Avancerad nivå
- Huvudområde: Maskinteknik, Miljöteknik

**Lärandemål**

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

- describe and discuss how Circular Economy concepts and tools can support the transition towards a sustainable bioeconomy;

- discuss the pros and cons of a Circular Economy;

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

- model 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; renewable bioenergy vs. fossil fuels);

- identify sustainable natural resource management; 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.

**Kursens huvudsakliga innehåll**

The course aims to show applications of Circular Economy principles to the management of natural resources. The course demonstrates the benefits of closing the loop (e.g. nutrient and water cycles) in bio-based systems, such as those associated to land use (e.g. agriculture and forestry), marine, and waste management (e.g. biowaste composting) systems. 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.

- Circularity in Bioeconomy vs. Fossil Economy
- Land, Oceans and Society (Food Systems, Forest Systems and Energy Systems)
- Global Cycles (Energy, Water, Biogeochemical: Carbon, Nitrogen, Phosphorus, Methane, Phosphorus, Sulphur)
- Human Appropriation of Stocks and Flows
- Ecosystem Services
• Ecological and Environmental Economics

**Kursupplägg**

• 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

**Undervisningsspråk**

Undervisningsspråk anges i kurstillfällesinformationen i kurs- och programkatalogen.

**Behörighet**

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

**Litteratur**

To be described before course start

**Utrustningskrav**

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**

**Krav för slutbetyg**

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