



MJ2611 Introduction Industrial Ecology 6.0 credits

Introduction Industrial Ecology

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

Establishment

Course syllabus for MJ2611 valid from Autumn 2010

Grading scale

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

Education cycle

Second cycle

Main field of study

Environmental Engineering

Specific prerequisites

At least 100 academic credits (ECTS) in a program of engineering or natural science including documented proficiency in english B or equivalent.

Language of instruction

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

Intended learning outcomes

The course aims at presenting the developments in research and application in the field of industrial ecology and discussing the role of industrial ecology in strategic sustainable development on a global scale as well as for strategies for manufacturing industries.

After completion of the course the students should be able to:

- Describe, explain and analyze the similarities and differences between an ecosystem and an industrial system
- Describe and explain the concepts of industrial ecology(IE)
- Analyse and discuss practical symbiotic cases from an Industrial Ecology and sustainability perspective
- Explain and analyse the challenges and opportunities of IE from North-South perspective
- Describe and explain the interaction between sustainable consumption and production within the framework of IE
- Describe and evaluate the relevance of IE to the development of a residential housing area
- Search information from scientific literature related to IE and summarize and analyse in written reports
- Summarize and orally present own work and critically discuss work done by others related to IE

Course contents

In this course the key concepts and the historical development of industrial ecology will be critically analysed. System tools to support industrial ecology will be briefly reviewed. Examples will be given how industrial ecology have been and can be used to develop long term strategies for the development of technology and for the industrial sector. The interaction between production and consumption as well as IE as a concept for creating the way for making material and energy use more effective than current practice in countries in the North will be discussed.

Course literature

Industrial Ecology, T. E. Graedel B. R. Allenby Prentice Hall 2003

Examination

- SEM1 - Seminar 1, 2.0 credits, grading scale: A, B, C, D, E, FX, F
- INL1 - Individual Assignment, 2.0 credits, grading scale: A, B, C, D, E, FX, F
- SEM2 - Seminar 2, 1.0 credits, grading scale: P, F
- TEN1 - Examination, 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

Fulfilling four modules namely (MOM1; 1,5cr: Individual Assignment), (MOM2; 1,5 cr: Seminar I and Study Visit), (MOM3; 1,5 cr: Seminar II), (MOM4; 1,5 cr: Home-Take Exam)

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.