AL227X Degree Project in Industrial Ecology,
Second Cycle 30.0 credits

Examensarbete inom industriell ekologi, avancerad nivå

Course syllabus for AL227X valid from Spring 19

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

**Grading scale:** P, F
**Education cycle:** Second cycle
**Main field of study:** Environmental Engineering, Mechanical Engineering

### Intended learning outcomes

After completed degree project, the student should be able to

1. demonstrate knowledge and understanding of the scientific foundation and best practices for the chosen subject, as well as an advanced understanding of current research and development within the area and in-depth knowledge of research methodology.
2. demonstrate the ability to search, create and integrate knowledge and to identify if there is a need for additional knowledge, all with a holistic, critical and systematic work approach.
3. demonstrate the ability to identify, analyse, assess and handle complex phenomena, issues and situations also with limited information
4. demonstrate the ability to plan and with adequate methods carry out qualified assignments within given time frames and to evaluate this work
5. demonstrate the ability to develop and evaluate products, processes, systems, methods or technical solutions with respect to humans' circumstances and needs as well as society's goals in term of economically, socially and ecologically sustainable development.
6. demonstrate the ability, both orally and in writing, in dialogue with different groups, to clearly explain and discuss conclusions and the knowledge and arguments on which these are based
7. demonstrate the ability to make assessments considering relevant scientific, social and ethical aspects
8. show such skill that is required to participate in research and development or to work independently in other qualified activities

### Course main content

Industrial Ecology is a modern interdisciplinary approach to the environmental problems of today. The starting point is the understanding that sustainable development is reached in the world only when technical, economic and social development takes place within the scope of the long-term supporting capacity of the ecosystems. The role and application of technology for a resource-efficient and environmentally sound social development is central for ensuring sustainability. For the degree project in Industrial Ecology applications (strategies, tools and methods) are mainly within fields such as urban and industrial metabolism, environmental system analyses, environmental management, environmental impact assessment, environmental technology as well as applications of sustainable development on technical development and technical systems.

Proposed degree projects can be found on the department's webpage. Proposals for degree projects can be formulated by students, companies or teachers. Priority is given to projects connected to the research domains of the division.
You can find routines for the thesis application and implementation on https://www.seed.abe.kth.se/en/uth/rutin

The degree project should include literature studies, theory and method description, experimental or theoretical study with performance analysis. The time needed should correspond to 20 weeks of full-time studies.

The degree project should result in a report that reflects a scientific working methodology. The degree project is presented at a seminar. At the seminar, examiner and peer reviewers participate as well as possibly external representatives. The student should also peer review another student’s thesis.

**Disposition**

AL227X replaces MJ273X.

**Language of instruction**

Language of instruction is specified in the course offering information in the course and programme directory.

**Eligibility**

At least 60 credits on the master's programme of which 30 credits with specialisation at second cycle level in the main field of study. To the KTH the joint requirement is added that the student is passed on at least 6 credits in the in the area Industrial Ecology of an advanced course relevant for the examination assignment that should be made. The examiner decides if the entry requirements are fulfilled.

**Literature**

Literature depends on chosen degree project task

**Examination**

- XUPP - Examination, 30.0 credits, grading scale: P, F

XUPP- Examination assignment, 30 credits.

**Requirements for final grade**

Grading scale: P/F