



# MJ150X Degree Project in Mechanical Engineering, First Cycle 15.0 credits

Examensarbete inom maskinteknik, grundnivå

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 MJ150X valid from Spring 2010

## Grading scale

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

## Education cycle

First cycle

## Main field of study

Technology

## Language of instruction

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

## Intended learning outcomes

This advanced work aims at developing the students' capability to, under realistic circumstances, independently perceive, formulate, plan and structure the realization of a defined assignment in the area of Industrial Ecology. The student is trained to use scientific methodologies to independently work within a project framework producing written and oral presentations as deliverables. After the examination the student should be able to:

- formulate problems and implement methodology in the area of Industrial Ecology in order to search for and evaluate solutions
- implement knowledge and proficiency acquired during the study period on problems in the area of Industrial Ecology
- plan her/his own work so that given goals are reached
- analyse the need for scientific information, perform information searches and evaluate the obtained information
- present the work in a written report with demands on content, structure and language
- refer in a report, to sources, figures, tables and formulas in a correct way
- write an English abstract with proper use of the terminology in the subject
- perform an oral presentation with demands on time, clarity of language, performance and illustrations

## Course contents

Industrial Ecology is a modern interdisciplinary framework for tackling the environmental problems of today. The starting point is the insight that a sustainable development on earth can only be reached when technical, economic and social development is performed within the borders of the carrying capacity of the ecosystem. Applications for the thesis project (strategies, tools and methods) in the area of Industrial Ecology is foremost in areas such as environmental system analysis, risk assessment, environmental management, environmental consequences, environmental technology and applications of sustainable development on technical development and technical systems.

The course is based on project work, either individually or in groups of two students. Suitable projects are supplied by the examiner. Project suggestions are discussed in cooperation with the student during the autumn period of the 3rd year. The project can be in cooperation with the industry but the academic work is mainly done at KTH. Each project is allotted to a supervisor from the department. The work shall be presented in the form of a written report. Usually it is written in Swedish with an English abstract; however it is allowed to write the report in English. Problem formulation, "Mid-term seminar" and "End seminar" are compulsory parts of the course. At the end seminar the student should be, except for presenting her/his own result, also make an opposition on another project report

## Specific prerequisites

At least 120 cr within the primary programme of 270 cr, as well as the course MJ2611 Industrial Ecology or corresponding knowledge

## Course literature

The course literature shall mirror the need and problem of the project

## Examination

- XUPP - Examination, 15.0 credits, grading scale: A, B, C, D, E, FX, 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.

## 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.