

Environmental Engineering

Programme course

6 credits

Miljöteknik

TKMJ24

Valid from: 2017 Spring semester

Determined by

Board of Studies for Mechanical Engineering
and Design

Date determined

2017-01-25

Main field of study

Energy and Environmental Engineering, Product Development, Mechanical Engineering

Course level

First cycle

Advancement level

G1X

Course offered for

- Energy - Environment - Management, M Sc in Engineering
- Electronics Design Engineering, M Sc in Engineering
- Mechanical Engineering, M Sc in Engineering
- Civil Engineering, B Sc in Engineering
- Engineering Electronics
- Chemical Analysis Engineering, B Sc in Engineering
- Air Transportation and Logistics
- Chemical Biology, M Sc in Engineering
- Biomedical Engineering, M Sc in Engineering
- Applied Physics and Electrical Engineering - International, M Sc in Engineering
- Applied Physics and Electrical Engineering, M Sc in Engineering
- Civic Logistics
- Chemical Biology
- Engineering Biology, M Sc in Engineering
- Design and Product Development, M Sc in Engineering
- Protein Science, Master's programme
- Computer Science and Engineering, M Sc in Engineering
- Information Technology, M Sc in Engineering
- Computer Science and Software Engineering, M Sc in Engineering

Entry requirements

Note: Admission requirements for non-programme students usually also include admission requirements for the programme and threshold requirements for progression within the programme, or corresponding.

Prerequisites

At least one year study of engineering. Basic knowledge of chemistry.

Intended learning outcomes

This course aims to contribute to knowledge and awareness about emergence of environmental problems and possible solutions of these problems. Focus is on the role of the engineer in proactive work to decrease environmental impact in relation to societal flows of material and energy. After successful completion of the course the student shall:

- Be able to describe the important environmental problems that has been presented during the course, and on an overall level, be able to describe the environmental and health effects these problems are causing,
- On an overall level, be able to describe the development within the environmental field, historically and today, and clarify how probable future scenarios concerning population growth and other societal development might affect the situation,
- Be able to apply the above mentioned knowledge by solving reality based case studies,
- Especially for important technical systems, be able to explain how they affect the environment , and through critical evaluation, explain how they can be adapted to reduce the environmental impact.
- Be able to describe central parts and characteristics of modern corporate environmental management.
- Be able to compile, present, and criticize a product report from a life cycle perspective,
- Be able to convert knowledge about environmental technologies by constructing and criticizing questions.

Course content

Emergence of and scientific background to environmental problems; sustainable development; environmental issues in relation to technical systems; technical, economical and political measures to solve environmental problems. The role of the engineer concerning the environment and sustainable development.

Teaching and working methods

Lectures and assignments.

Examination

TEN1	A Written Examination	U, 3, 4, 5	4 credits
UPG2	Approved assignment	U, G	2 credits

Grades

Four-grade scale, LiU, U, 3, 4, 5

Other information

Supplementary courses: Miljömanagement, Industrial Ecology, Resource efficient Products

Department

Inst för ekonomisk och industriell utv

Director of Studies or equivalent

Niclas Svensson

Examiner

Carina Sundberg

Course website and other links

<http://www.iei.liu.se/envtech/utbildning/kurser/tkmj24?l=sy>

Education components

Preliminary scheduled hours: 45 h
Recommended self-study hours: 115 h

Course literature

Additional literature

Books

J. Ammenberg och O. Hjelm. (Redaktör), (2013) *Miljöteknik - för en hållbar utveckling*.
Studentlitteratur
ISBN: 978-91-44-09275-1

Common rules

Regulations (apply to LiU in its entirety)

The university is a government agency whose operations are regulated by legislation and ordinances, which include the Higher Education Act and the Higher Education Ordinance. In addition to legislation and ordinances, operations are subject to several policy documents. The Linköping University rule book collects currently valid decisions of a regulatory nature taken by the university board, the vice-chancellor and faculty/department boards.

LiU's rule book for education at first-cycle and second-cycle levels is available at http://styrdokument.liu.se/Regelsamling/Innehall/Utbildning_pa_grund-_och_avancerad_niva.