



# KE2051 Environmental Catalysis 7.5 credits

## Miljökatalys

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 KE2051 valid from Autumn 2023

## Grading scale

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

## Education cycle

Second cycle

## Main field of study

Chemical Science and Engineering

## Specific prerequisites

KE1175 and KE1160

or

MF2015

or

MF2016

or equivalent knowledge

## Language of instruction

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

## Intended learning outcomes

On completion of the course, the technology student should be able to

- Assess pollution problems in society and industry
- Propose a suitable sustainable method to reduce emissions of hazardous substances from mobile or stationary sources from given data
- Describe the interaction of molecules with surfaces relevant to catalysis
- Explain the role of the catalyst in environmental catalysis and identify its constraints

## Course contents

Characterization of emissions

Characterization of catalysts and catalytic reactions

Emissions standards and test cycles

Exhaust gas catalysts and system design

Catalysis in oil refining

Design of catalytic reactors

Emerging technologies in environmental catalysis

Hydrogen generation and fuel cells

## Examination

- LAB1 - Laboratory work, 1.5 credits, grading scale: P, F
- SEM1 - Seminars, 3.0 credits, grading scale: P, F
- TEN1 - Written exam, 3.0 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.

## 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.