



# CH2006 Advanced Measurements of Air Contaminants, Noise and Vibrations 7.5 credits

Avancerade mätningar av luftföroreningar, buller och vibrationer

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 CH2006 valid from Autumn 2023

## Grading scale

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

## Education cycle

Second cycle

## Main field of study

Technology and Health

## Specific prerequisites

180 university credits (hp) in engineering or natural sciences, and documented proficiency in English corresponding to English B/English 6.

# Language of instruction

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

## Intended learning outcomes

The overall goal of the course is to provide the student with in-depth knowledge of measurement and analysis techniques and variations of these with respect to air pollution, mainly organic and non-organic particles, and sounds and vibrations that should be analyzed are measured and analyzed in different ways depending on the work and the workplace where the risk assessment is carried out.

After completing the course, each student should be able to:

1. Perform measurements and risk assessments of the above-mentioned factors in various workplaces. Describe and justify the choice of different measurement strategies; choice of measurement and analysis method, number of measuring points, number of included subjects, and measurement time.
2. Discuss scientific articles on the above mentioned measurement strategies.
3. Be able to interpret and draw conclusions based on the measurement results, and compare results from different measurement and analysis methods.
4. Describe the Swedish and European regulations that regulate the above-mentioned factors and reflect on the background to how current limit levels have been set; and if there are occasions when a lower level of risk should be applied.

## Course contents

- Organic and non-organic particles (dust)
- Sound and vibrations
- Acute and long-term health effects
- Advanced methods for exposure measurements and analyses.
- Intervention strategies
- Work environment rules in the area

## Learning activities

The teaching consists of lectures and workshops as well as compulsory exercises in the form of seminars and webinars. During laborations and in a project, you will practice and carry out measurements. In addition to scheduled learning activities, there is time for your own studies.

## Compulsory attendance

Applies to all exercises conducted in the form of seminars (or webinars) and laborations included in SEM1 and LAB1.

## **Course literature**

Scientific articles and documents presented at the start of the course that are listed and available on KTH-Canvas.

## **Examination**

- LAB1 - Laboratory work, 2.0 credits, grading scale: P, F
- RED1 - Project work, 2.5 credits, grading scale: P, F
- SEM1 - Seminar, 1.0 credits, grading scale: P, F
- TEN1 - Written exam, 2.0 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.

Learning Objective 1 is examined in the sub-section LAB1, RED1, and TEN1.

Learning Objective 2 is examined in SEM1.

Learning Objective 3 is examined in the sub-section LAB1, RED1, and TEN1.

Learning Objective 4 is examined in TEN1.

## **Other requirements for final grade**

Requirements for final grade on the course: Approved written and oral presentation of assignments and active participation in seminars and laboratory work. The examination (A-F) determines the final grade of the course, which is issued when all the course elements have been passed.

## **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.