



CH202V Advanced Measurements of Air Contaminants in the Work Environment 4.0 credits

Avancerade mätningar av luftföroreningar i arbetsmiljö

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

Establishment

Course syllabus for CH202V valid from Autumn 2023

Grading scale

P, F

Education cycle

Second cycle

Main field of study

Technology and Health

Specific prerequisites

At least 120 hp from technical or natural science field.

In addition at least two years experience from working as safety engineer or similar, which has included work with chemical work environment risks. Or completion of university course

about chemical work environment risks, e.g. KTH courses CH2005 Evaluation and Measures of the Chemical Work Environment, CH 2014 Chemical and Microbiological Risk Management in the Work Environment, CH202V En god kemisk arbetsmiljö - riskbedömning och utveckling.

Language of instruction

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

Intended learning outcomes

The main aim of the course is to give the student deepened knowledge about measurements and analysis of air contaminants including how measurement and analytical methods can be chosen and adapted to the aim of the measurement. This includes selection of what substances should be measured. Further, the aim is to develop measuring strategies adapted to different aims of the measurements including planning of the measurements in such a way that the measurements can be interpreted and corresponds to the aim of the measurement.

After the course, the students should be able to:

1. Find and select methods for measurements and analysis of substances in the provisions from the Swedish Work Environment Authority about occupational exposure limits. This includes basic facts about the reliability and accuracy of the methods.
2. Develop, describe and motivate the selection of a measuring strategy in relation to the aim of the measurements. This includes selection of measurement and analytical method, selection and number of measuring points, placing of measuring points and sampling time.
3. Plan and conduct measurements and risk assessments of air contaminants in different types of settings.
4. Interpret measurements results and draw conclusions as well as discuss and evaluate the reliability of measurements.
5. Describe the Swedish and European regulations about occupational exposure limit values and reflect on the basis for the occupational exposure limit values as well as if there are circumstances when lower guiding values could be motivated.

Course contents

- Planning and conducting a complex measurement, aiming at measuring the exposure to air contaminants as well as provide a basis for discussion about control measures.
- Methods for measurement of air contaminants, including exposure measurements and measurements with direct-reading instruments.
- How measuring methods and measuring strategies can be combined.
- Regulation regarding measurements of air contaminants and their impact on how measurements should be carried out.

This course presupposes that the student have an insight in health effects from air contaminants and some insights in control measures to reduce exposure to air contaminants.

The course is given as a distance course, with recorded video presentations (Zoom) and discussions about the video presentations and other material.

The students shall do one assignment, as a basis for the project work. The assignment is to plan a project work aiming at measuring air contaminants in a complex environment. The project work is to conduct the measurements (to be conducted as a group work).

The project work shall be presented in a report and orally.

Examination

- SEM1 - Seminar, 0.5 credits, grading scale: P, F
- INL1 - Assignments, 0.5 credits, grading scale: P, F
- PRO1 - Project work, 1.5 credits, grading scale: P, F
- TEN1 - Home examination, 1.5 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.

If the course is discontinued, students may request to be examined during the following two academic years.

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.