



FKD3320 Trace Metal Analysis and Speciation 2.5 credits

Spåranalys och speciering av metaller

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 FKD3320 valid from Spring 2014

Grading scale

Education cycle

Third cycle

Specific prerequisites

Previous experimental experience in using the Atomic Absorption Spectrometer and/or other trace metal analysis techniques or metal speciation techniques at the division of Surface and Corrosion Science, KTH, and the use of one of those techniques within the Ph.D. project.

Language of instruction

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

Intended learning outcomes

The aim is to provide necessary theoretical and practical knowledge in order to critically assess analytical results for trace metal analysis and metal speciation analysis. The student should after completing the course be able to analyse total metal concentrations in various aquatic samples using atomic absorption spectroscopy and adapt existing methods to the demands of complex systems. The student should furthermore know the basics of data evaluation and method development for any trace metal analytical technique and to some extent metal speciation analytical techniques.

Course contents

The course is divided in four assignments. Each assignment should be performed at least once to pass the course:

- 1) Participation in theoretical literature study discussions, with preceding reading of the literature – literature meeting;
- 2) Suggestion of literature (scientific paper, book chapter, or similar) of relevance for the course, and presentation of this literature for the group during the literature meeting – presentation;
- 3) Opposition (preparation of critical questions) of the presenting student in a literature meeting – opposition; and
- 4) Practical work in the lab performing analysis by adapting existing protocols to complicated systems where several analytical parameters need attention to produce relevant analytical results – practical method elaboration.

The work effort to participate in a regular literature meeting is stipulated to 1.5 h. The regular work effort to prepare for this meeting, if you are not the presenter, corresponds to 1.5 h, 4 h for the presenter, and 3 h for the opponent. The work effort for the practical method elaboration assignment corresponds to 20 h/topic (to be decided with the course teachers).

Course literature

Framtagar inom kursen - vetenskapliga artiklar, bok-kapitel, metodbeskrivningar, manualer etc.

Examination

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.

In order to pass the course, the student needs to successfully pass each of the above described assignments, and reach a working effort equivalent to 67 h.

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.