FKF3450 Advanced Experimental Techniques; Theory and Practice 15.0 credits

Avancerad experimentell teknik; teori och praktik, II

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

Establishment

Course syllabus for FKF3450 valid from Spring 2018

Grading scale

G

Education cycle

Third cycle

Specific prerequisites

Accepted for doctoral studies at KTH-CBH.
The course is included as a possible choice within the subject-specific courses.

Language of instruction

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

Intended learning outcomes

The student must after the course:

1. Have demonstrated high skills in the technique, both in theory and in practice. Have documented knowledge on the state of the art of the technique (through a written report).
2. Be able to communicate the technique both orally and in written text on advanced research level to fellow researchers.
3. Be able to coordinate/administrate the use of the technique in a research organization.

Course contents

At least two years of instrument responsibility for one or several instruments. However, the course can only be taken once. Writing a manual. Teaching colleagues have to use the technique (documented)

Emphasis should be placed on the use of the instrument / technology in subject-relevant applications

Disposition

Being responsible for an instrument/technique includes maintaining the instrument in good shape, teaching others to run the instrument and keeping the booking schedules up to date. In addition the student has to communicate services and service contracts with companies associated with the instrument and write a manual. It is important that this work is appreciated and documented. A course, incorporating these things, will highlight the knowledge the student has gained by being instrument-responsible and acknowledge the work by the student. In addition it will lead to the students' improved theoretical knowledge on the instrumental technique and that this knowledge is shared with the colleagues.

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.

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

Oral exam on the technique/instrument which is held by the main supervisor or by a person nominated by the main supervisor.

Writing a report on the state of the art of the instrumental technique. It should include recent advances in the instrumental technique, what the technique can be used for, and limitations.

Other requirements for final grade

These parts must have been accomplished for the final examination of the course:

1. Minimum 2 year of responsibility of an instrument. The main supervisor will decide whether the suggested instrumental duty is sufficient/suitable for the student to take the course.
2. Written instrument manual.
3. Documentet teaching of colleagues on how to use the instrument.
4. Passed oral exam on the technique/instrument (handled by the main supervisor).
5. Passed report on the instrumental technique including its state of the art.

The course is counted as part of the research studies and not as an institutional service.

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.