



FSK3541 Microscale Acoustofluidics 6.0 credits

Akustofluidik vid mikroskala

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

Establishment

Head of school at the SCI school has 2020-12-07 decided to establish this syllabus to apply from Autumn 2019, registration number: S-2020-1708

Grading scale

P, F

Education cycle

Third cycle

Specific prerequisites

Enrolled in a PhD programme at KTH or other universities.

Language of instruction

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

Intended learning outcomes

After completion of the course the student shall:

- Explain theoretical concepts and derivations in acoustofluidics.
- Implement the theory for designing a microscale acoustofluidic system.
- Evaluate different experimental methods in microscale acoustofluidics.

Course contents

The course contains a series of seminars where the following subjects are discussed: governing equations in microfluidics; ultrasound resonances in microsystems; piezoelectricity and acoustic coupling; acoustic radiation forces; acoustic streaming; particle manipulation and trapping; and various applications of the technology in life sciences. Students are expected to prepare before, and lead these discussions.

Examination

- SEM1 - Seminars, 6.0 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.

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

Examination is based on active participation in seminars and written assignments.

Other requirements for final grade

Active participation in seminars and approved written assignments.

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.