SK2300 Optical Physics 6.0 credits

Optisk fysik

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

The Head of School at the SCI-School has decided on April 15, 15, to set this syllabus to apply from HT2020, diary number: S-2020-0295.

Grading scale

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

Education cycle

Second cycle

Main field of study

Engineering Physics

Specific prerequisites

For external students the following are required: 120 credits within natural sciences and engineering or corresponding knowledge and documented proficiency in English B or corresponding knowledge.

Recommedned previous knowledge:
Basic knowledge within classical physics, particularly waves and elementary classical optics

(course SK1101, Classical Physics or corresponding), mathematics (vector analysis, differential equations, fourier transformation).

Language of instruction

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

Intended learning outcomes

After completing the course the student should be able to:

- Explain optical phenomena and solve technical problems related to optical technology applications
- Build and use optical setups to analyze optical phenomena

Course contents

Electromagnetic fields, propagation in vacuum and matter. Polarization, interference, thin film optics, optical metrology. Diffraction, Fourier optics, coherence, labs.

Examination

- LAB1 - Laboratory Work, 2.0 credits, grading scale: P, F
- TEN1 - Examination, 4.0 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.

Other requirements for final grade

One written exam (TEN1; 4 university credits). Laboratory work (LAB1; 2 university credits).

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.