



SK2302 Optics 9.0 credits

Optik

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

Establishment

Course syllabus for SK2302 valid from Spring 2022

Grading scale

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

Education cycle

Second cycle

Main field of study

Engineering Physics

Specific prerequisites

The previous knowledge specified for the master's program in photonics.

English 6 / English B

Language of instruction

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

Intended learning outcomes

The course has primarily two goals:

- to give a deeper and broader insight into optics as a science and a technology, its basic physics and phenomena and their importance for technical applications
- to be a starting point for the following, more specialised courses within the special area of optics and photonics

Course contents

- Electromagnetic fields, propagation in vacuum and matter.
- Wave optics. Polarization, interference, optics of thin films, optical measurement techniques.
- Diffraction, fourier optics, optical information processing.
- Coherence.
- Quantum phenomena, non-linear optics.
- Geometrical optics and image formation, optical analysis and design, image quality.
- Transfer of energy and information; radiometry and photometry

Examination

- TEN1 - Examination, 6.8 credits, grading scale: A, B, C, D, E, FX, F
- LAB1 - Laboratory work, 2.2 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.

Other requirements for final grade

- Laboratory work (2,25 ECTS credits)
- One written closed-book examination (6,75 ECTS 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.