SK2350 Optical Measurement Techniques 6.0 credits

Optisk mätteknik

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

Establishment

Course syllabus for SK2350 valid from Spring 2022

Grading scale

P, F

Education cycle

Second cycle

Main field of study

Physics, Engineering Physics

Specific prerequisites

Basic knowledge in classical optics SK1120 (Waves, 6 credits) and SK2300 (Optical physics, 6 credits) or equivalent.
Recommended previous knowledge:
SK2301 (Optical physics, 3 credits).

English B / English 6

Language of instruction

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

Intended learning outcomes

With the previous courses in optics and waves as a background, the goal in this course is to specialize within chosen parts in modern optical physics, with consideration of the special aspects in metrological applications within industry and research.

After the course, the student should be able to:

- identify physical measurement problems where optics can be applied
- estimate forced metrological compromises and also be able to carry out some basic measurement tasks.

Furthermore, the goal is to establish a personal contact between the student and the labour market for Masters of Engineering specializing in optics.

Course contents

General metrology and error analysis, photometry, optical detectors, holographic metrology, telecentric systems. perspective, velocity and flow measurements, optical fibers and fiber sensors, interferometry.

Examination

- INL1 - Hand in Assignments, 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.

Other requirements for final grade

Examination by hand in assignments (INL1; 6 credits, grading scale P/F).

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.