FSK3884 Photonics 7.5 credits

Fotonik

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

Course syllabus for FSK3884 valid from Spring 2017

Grading scale

Education cycle

Third cycle

Specific prerequisites

Enrolled as PhD student.

Language of instruction

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

Intended learning outcomes

After the course the students should have:

- In depth knowledge of optical communication devices and the related technological issues, including: photonic integrated circuits, optical amplifiers, semiconductor lasers, and optoelectronic integration techniques.

- Introductory knowledge of plasmonics.
- Overview of recent progress in nanophotonics.

Course contents

- Optical Amplifiers
- Silicon Photonics
- Plasmon based Nanophotonics
- Emerging Areas in Photonics
- Numerical Methods - FDTD & FEM, CAD
- Semiconductor Lasers
- Optoelectronic Integration

Course literature

Saleh & Teich, Fundamentals of Photonics, 2nd edition. Föreläsningsanteckningar samt laborationsinstruktioner. Vissa relevanta kapitel i följande böcker kan vara till hjälp: Agrawal, Fiber-Optic Communication Systems samt Mayer, Plasmonics : Fundamentals and Applications.

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.
- Assignments, 3.5 credits, grade scale: P/F
- Examination, 4.0 credits, grade 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.