



# IO2655 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 IO2655 valid from Autumn 2008

## Grading scale

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

## Education cycle

Second cycle

## Main field of study

Electrical Engineering

## Specific prerequisites

## 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 technology and devices (including photonic integrated circuits, optical amplifiers, semiconductor lasers and optoelectronic integration)**
- **introductory knowledge in some other important areas of photonics (including optical storage, displays, optical sensors and bio-photonics).**

## Course contents

- **Optical thin film technology**
- **Near-field optics and optical storage**
- **Photonic integrated circuits, optoelectronic integration**
- **Photonic crystals**
- **Semiconductor lasers, optical amplifiers, optical modulators**
- **Liquid crystals and displays**
- **Optical sensors, bio-photonics**

## Course literature

**Lecture notes. Some relevant chapters of the following reference books can also be helpful: 1. Agrawal, Fiber-Optic Communications Systems, Wiley 2002, 3rd ed. or, Mynbaev & Scheiner, Fiber-Optic Communications Technology, Pearson Education, 2001. 2. Saleh & Teich, Fundamentals of Photonics, Wiley & Sons, 1991. 3. Prasad, Introduction to Biophotonics, John Wiley & Sons, 2003**

## Examination

- ANN1 - Assignments, 3.5 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

- **Home assignments**
- **Simple exam (fill-in-the-blank or multiple choice test)**

## 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.