Linnæus University

Jnr: 2014/3274-3.1.2

Course syllabus

Faculty of Technology

Department of Physics and Electrical Engineering

4FY512 Ämnen i avancerad optik, 7,5 högskolepoäng
Topics in Advanced Optics, 7.5 credits

Main field of study
Physics

Subject Group
Physics

Level of classification
Second Level

Progression
A1N

Date of Ratification
Approved by Faculty of Technology 2014-10-03
The course syllabus is valid from autumn semester 2015

Prerequisites
Optics, 7,5 credits or equivalent is required.

Objectives

The student should be able to:

- analyze simple optical systems using Fourier theory
- understand the use of transfer functions and mathematical descriptions of polarization states
- be familiar with with some new optical materials and photonic devices
- have an understanding of light at the level of quantum optics
- carry out laboratory work using lasers, e.g. holography.

Content

The course will treat topics such as:

- fourier optics using transforms.
- the lens as a Fourier transformer.
- modern optical elements, fibers, lasers and holography.
- introduction in optical properties of new materials
- quantum optics, coherence theory.

Type of Instruction

The teaching consists of lectures, laboratory work, computer exercises and tutorials given individually or in a group.

Examination

Examination

The course is assessed with the grades A, B, C, D, E, Fx or F.
The grade A constitutes the highest grade on the scale and the remaining grades follow in descending order where the grade E is the lowest grade on the scale that will result in a pass. The grade F means that the student's performance is assessed as fail (i.e. received the grade F).

Course Evaluation

During the course or in close connection to the course, a course evaluation is to be carried out. The result and analysis of the course evaluation are to be communicated to the students who have taken the course and to the students who are to participate in the course the next time it is offered. The course evaluation is carried out anonymously. The compiled report will be filed at the Faculty.

Credit Overlap

The course cannot be included in a degree along with the following course/courses of which the content fully, or partly, corresponds to the content of this course:4FY812 Topics in Advanced Optics, 7.5 credits

Other

Grade criteria for the A–F scale are communicated to the student through a special document. The student is to be informed about the grade criteria for the course by the start of the course at the latest.

Required Reading and Additional Study Material

Required reading

Hecht, E,*Optics*, Addison-Wesley, 1987.Pages 150 (657).
Various authors,*Recent review papers*.