SK2370 Physics of Visual Impressions 6.0 credits

Synintryckens fysik

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 SK2370 valid from Autumn 2007

Grading scale

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

Education cycle

Second cycle

Main field of study

Engineering Physics,Physics

Specific prerequisites

Recommended prerequisites: SK1112 (Electromagnetism and waves, 9 credits) or equivalent.

Language of instruction

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

Intended learning outcomes

The main goal with the course is to extend the basic course in physics to develop an understanding of vision related physics.

After the course, the student will be able to:

- estimate reasonableness of visual impressions specifications
- read technically scientific articles in Swedish and in English
- initiate and lead work with vision related characteristics of products in the chosen profession.

Course contents

Repetition in basic optics.

Optics of the human eye, accommodation, adaptation and convergence. Different methods for 3D-illusion. Wavelength and colour, colour spaces and colorimetry. Colour in dyes and pigments. Additive and subtractive colour mixing. Photometry and illumination. Cameras and imaging. Quality in camera imaging. Aliasing.

Course literature

Notes from lectures will be announced at the course home page.

Examination

- RED1 - Report, 2.0 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

Examination in two parts:
a technical news article in English or another non-Swedish language will be summarized and presented to a non-technically educated group of people (RED1; 2 credits, grading scale P/F),
oral exam where the range and general view of the topic is presented to the teacher (TEN1; 4 credits, grading scale A-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.