



SK3372 Visual Psychophysics 7.5 credits

Visuell psykofysik

Course syllabus for SK3372 valid from Spring 13, edition 1.

Intended learning outcomes

The overall goal of this course is to give the student a fundamental understanding of psychophysics and how it can be applied to measurements of visual function.

After completing this course, the student should be able to:

- Discuss the advantages with different types of psychophysical methods
- Independently plan and design a psychophysical measurement of a visual function
- Evaluate psychophysical measurements described in scientific publications

Additionally for 7.5 credits:

- Design and perform visual psychophysical tests with Matlab® and WinVis/Psychophysical toolbox or similar program.

Course main content

Fundamental principals of psychophysical measurements, the psychometric function, psychophysical methods, choice and control of the stimulus, detection and resolution. Measurement of absolute threshold, intensity discrimination, and adaptation to different light levels. Measurement of visual acuity and contrast sensitivity. Temporal factors in vision. Wavelength dependent effects on vision, color vision, chromaticity diagram. Vision development and age related changes.

Additionally for 7.5 credits: Design and perform visual psychophysical tests with Matlab® and WinVis/Psychophysical toolbox or similar program.

Disposition

The students read the course literature and prepare the presentation and programming tasks individually. All students and the examiner then meet for the oral presentations.

Eligibility

Recommended previous knowledge: Optics of the human eye, basics of MatLab programming.

Literature

T. T. Norton, D. A. Corliss and J. E. Bailey, The Psychophysical Measurement of Visual Function, Butterworth-Heinemann, 2002.

In addition, relevant course literature can be added by the participants, e.g., Ehrenstein chapt 43 "Psychophysical Methods" and help manuals/publications on WinVis/Psychophysical toolbox.

Examination

Requirements for final grade

For 4,5 credits: Oral presentation of the course literature.

For 7,5 credits: Oral presentation of the course literature as well as solving the programming tasks.