



EN2401 Image and Video Processing 6.0 credits

Bild- och videobehandling

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 EN2401 valid from Spring 2010

Grading scale

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

Education cycle

Second cycle

Main field of study

Electrical Engineering

Specific prerequisites

For single course students: 120 credits and documented proficiency in English B or equivalent

Language of instruction

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

Intended learning outcomes

This course provides an introduction to principles of digital image and video processing. After passing this course, participants should be able to use point operations, choose appropriate color spaces, perform basic image segmentation and image filtering, implement multiresolution and image matching techniques, video filters, and basic algorithms for image and video compression. Homework exercises and a course project will help students to gain hands-on experience.

Course contents

Continuous-tone images, point operations, color, image segmentation and morphological processing, image filtering, unitary transforms, multiresolution image processing, image matching, motion estimation, video filtering, motion-adaptive multiresolution processing, restoration, superresolution, image compression, motion-compensated video compression.

Course literature

R.C. Gonzalez and R.E. Woods: Digital Image Processing, Prentice-Hall, 2008.

Examination

- INL1 - Homework, 2.0 credits, grading scale: A, B, C, D, E, FX, F
- PRO1 - Project, 2.0 credits, grading scale: A, B, C, D, E, FX, F
- TEN1 - Examination, 2.0 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

Written examination (16%, 1 ECTS credit), homework (42%, 2.5 ECTS credits), course project (42%, 2.5 ECTS credits)

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.