



# EQ2330 Image and Video Processing 7.5 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 EQ2330 valid from Spring 2019

## 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

After passing this course, participants should be able to

- describe and use the principles of digital image and video processing to develop image processing algorithms,
- develop image processing algorithms for image filtering and restoration, image transformation and multiresolution processing, image and video compression, as well as image matching and segmentation,
- implement (for example with MatLab) and assess the developed image processing algorithms,
- explain algorithm design choices using the principles of digital image/video processing,
- develop image processing algorithms for a given practical image/video processing problem
- analyze given image/video processing problems, identify and explain the challenges, propose possible solutions, and explain the chosen algorithm design.

To achieve higher grades, participants should also be able to

- solve more advanced problems in all areas mentioned above.

## Course contents

This course introduces the principles of digital image and video processing, discusses current image and video processing technology, and provides hands-on experience with image/video processing and communication methods. The course includes topics on image filtering and restoration, image transform algorithms, multiresolution image processing, image matching and segmentation techniques, as well as image and video compression.

## Course literature

See course homepage. Preliminary

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

## Examination

- INL1 - Assignment, 1.5 credits, grading scale: P, F
- TEN1 - Exam, 6.0 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**

Preparation assignments, course projects, written examination.

Preparation assignments 1.5 ECTS (P/F). Course Projects 3 ECTS (A-F), Exam 3 ECTS (A-F). The final grade is the average of course projects and exam.

## **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.