



# IK2651 Principles of Communications 6.0 credits

## Kommunikationsprinciper

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 IK2651 valid from Autumn 2007

## Grading scale

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

## Education cycle

Second cycle

## Main field of study

Information Technology, Information and Communication Technology

## Language of instruction

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

## Intended learning outcomes

The course gives a basic knowledge of the principles of communications. It deals with analogue and digital modulation methods, random signals and noise, information theory and coding.

After the course the participants should be able to:

- Describe and analyze e.g. signal to ratios in analogue modulated systems with additive white gaussian noise
- Describe and analyze e.g. bit error rates in digitally modulated systems with additive white gaussian noise
- Describe basic information theory and coding

## Course contents

Review of signal and linear systems analysis and probability.

Linear, angle, and pulse modulation.

Random signals and noise (additive white gaussian noise).

Signal to noise ratios in analog modulations systems.

Bit error rates in data communication systems.

Introduction to information theory and coding.

## Specific prerequisites

The prerequisites of the Master Program in Photonics.

## Course literature

Ziemer and Tranter: ?Principles of Communications?, 5th ed, John Wiley 2002, ISBN 0-471-39253-7

## Examination

- TEN1 - Examination, 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

One written examination (TEN1; 6 hp)

## 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.