



# EP1110 Data Links and Local Area Networks 7.5 credits

Datalänkar och lokala nät

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 EP1110 valid from Autumn 2007

## Grading scale

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

## Education cycle

First cycle

## Main field of study

## Specific prerequisites

## Language of instruction

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

## Intended learning outcomes

The purpose of the course is to give a good understanding about basic techniques for data links, and thorough knowledge about principles of and technologies for local area networks.

## Course contents

- \* Data transmission: channel limitations. Analog and digital transmission, line coding and modulation. Multiplexing.
- \* Physical infrastructure and transmission media: SDH/SONET, xDSL, PON, wireless networks.
- \* Flow and error control: stop&wait and sliding window, error detection and control, error correcting codes, retransmissions (ARQ).
- \* Multiple access and channelization: TDMA, FDMA, WDMA, CDMA, CSMA/CD, CSMA/CA. Wireless channelization, spread spectrum, OFDM, etc. Access protocols for optical networks. MPLS and GMPLS.
- \* Local area networks: topologies, access control, Ethernet, wireless LANs, bridged networks, "spanning tree", virtual LANs. Data link protocols.
- \* Metro area networks: Metro Ethernet, ring networks, WiMAX.

## Course literature

To be decided.

## Examination

- LAB1 - Laboratory Work, 1.5 credits, grading scale: P, F
- SEM1 - Seminar, 1.5 credits, grading scale: P, F
- TEN1 - Examination, 4.5 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

Laboratory course (LAB1; 1 credit).  
Written exam. (TEN1; 4 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.