



# HI103V Data Communications I

## 7.5 credits

### Datakommunikation I

This is a translation of the Swedish, legally binding, course syllabus.

### Establishment

Course syllabus for HI103V valid from Autumn 2007

### Grading scale

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

### Education cycle

First cycle

### Main field of study

Electrical Engineering, Technology

### Specific prerequisites

Completed upper secondary education incl documented proficiency in English.

### Language of instruction

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

## Intended learning outcomes

Since this course is offered in English, it is therefore also open to international students without a working knowledge in Swedish. The course can be taken in any country; no physical presence at KTH in Sweden is required. Our Datacom course series, HI103V and HI108V, 10 credit hours total, is also available at international campuses. This course is part of our IT-Security and Datacom 25 credit hours package, offered each academic year. All 25 credit hours can be taken away from KTH in a single year, no attendance on KTH campus required.

## Course contents

Physical layer data transmission, transmission media, data encodings, modulation, Internet, Standards and the OSI model Introduction to Internet Standards, ISO OSI model, Data link layer flow control, error detection and control; HDLC, other protocols, Multiplexing LAN - Local area networks, MediaAccess, Topologies, Wireless WAN - Wide area networks Circuit switching, switching, routing; packet switching, congestion control Internetworking Protocols, ARP, ICMP Transport & SessionLayers Transport services, Protocols mechanisms, Session layer, Satellite Communications, TCP/IP via Sat. Transponder, Transmission Delays Access types, Modulation Transponder Technology, Low-Orbit Networks, ISDN and ATM ISDN motivation, services, channel structure), ATM cell format, stat. multiplexing Network management and security. Network Management, SNMP, Structure, Privacy, Authentication, Access Control), Security Crypto systems, Algorithms, Secure e-mail, Secure transactions, Smart cards.

## Examination

- TEN1 - Examination, 3.0 credits, grading scale: A, B, C, D, E, FX, F
- ANN3 - Assignment, 1.5 credits, grading scale: P, F
- ANN1 - Assignment, 1.5 credits, grading scale: P, F
- ANN2 - Assignment, 1.5 credits, grading scale: P, 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.

If the course is discontinued, students may request to be examined during the following two academic years.

## 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.