HI2002 Routing in IP Networks 7.5 credits

Routing i IP-nät

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

Establishment

Course syllabus for HI2002 valid from Spring 2017

Grading scale

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

Education cycle

Second cycle

Main field of study

Information Technology, Information and Communication Technology

Specific prerequisites

Knowledge corresponding to HE1033 Communication Networks

Language of instruction

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

Intended learning outcomes

The contents of the course are summarized in the following number objectives for what the course participants will know after passed course. After completion of the course the participants should be able to:

- Design and dimension a network with CIDR (Classless Inter Domain Routing)
- Describe and explain the difference between IPv4 and IPv6
- Explain functions and algorithms that are used for routing within and between autonomous systems
- Describe and explain the difference between different distance vector protocols and the link state protocol with regard to functions
- Analyze and optimize the routing table in a router
- Explain and configure multicast routing
- Plan and design a company network based on the routing protocol BGPv4
- Dimension and configure a company network in practise

Course contents

- IP addressing, CIDR (classless interdomain routing)
- Functions and algorithms for routing within and between autonomous systems
- Distance vector protocols (RIPv1, RIPng and EIGRP)
- Link state protocols (OSPFv3 and OSPFv4)
- Exterior gateway routing protocol BGPv4
- Optimizing the routing table in an IP networks
- Multicast protocol
- IPv4 and IPv6
- Practical assignments and laboratory exercises are important parts of the course

Course literature

Web based course material, CCNP1 Building Scalable Internet Works, or in printed version, Building Scalable Cisco Internet works (BSCI), latest version, Ciscopress
Any changes will be announced four weeks before the course starts.

Examination

- LABB - Lab Work, 3.0 credits, grading scale: P, F
- TEN1 - Examination, 3.0 credits, grading scale: A, B, C, D, E, FX, F
- LABA - Lab Work, 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.

Other requirements for final grade

Passed written exam
Passed lab assignments
Course credit rate: A-F.

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.