



# DD2490 IP Routing in Simple Computer Networks 7.5 credits

IP-routning inom enkla datornät

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

## Establishment

Course syllabus for DD2490 valid from Autumn 2009

## Grading scale

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

## Education cycle

Second cycle

## Main field of study

Computer Science and Engineering, Information Technology, Information and Communication Technology

## Specific prerequisites

Single course students: 90 university credits including 45 university credits in Mathematics or Information Technology. Swedish B or equivalent and English A or equivalent.

## Language of instruction

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

# Intended learning outcomes

After the course, the student should be able to:

- describe the fundamental design principles of current IP networks,
- configure an enterprise or campus network,
- explain how intra-domain and inter-domain routing works, and in particular how redistribution and aggregation works,
- describe the Dijkstra and Bellman-Ford routing algorithms,
- in detail explain how link-state and distance-vector routing protocols work and be able to assess their differences,
- configure Internet routers using several intra-domain routing protocols, including RIP, OSPF, IS-IS and PIM-SM,
- explain the network architecture for IP multicast and how IP multicast is distributed within a network,
- describe and practically configure a network with label switching and traffic engineering using MPLS and RSVP.

## Course contents

Overview of Internet routing. The following protocols are studied: RIP, OSPF, IS-IS, PIM, MPLS and RSVP. The course contains extensive labs.

## Course literature

To be announced at least 4 weeks before course start at course web page.

## Examination

- HEM1 - Assignments, 1.5 credits, grading scale: P, F
- TEN1 - Examination, 3.0 credits, grading scale: A, B, C, D, E, FX, F
- LAB1 - Laboratory Assignments, 3.0 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.

In this course all the regulations of the code of honor at the School of Computer science and Communication apply, see: [http://www.kth.se/csc/student/heder-skodex/1.17237?l=en\\_UK](http://www.kth.se/csc/student/heder-skodex/1.17237?l=en_UK).

## Other requirements for final grade

Examination (TEN1; 3 university credits).

Laboratory assignments (LAB1; 3 university credits).

Home assignments (HEM1; 1,5 university 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.