



# COURSE SYLLABUS

## Data- och telekommunikation

### Computer- and Telecommunication

7,5 ECTS credit points (7,5 högskolepoäng)

**Course code:** ET1447

**Educational level:** First cycle

**Course level:** G1F

**Field of education:** Technology

**Subject group:** Electrical Engineering

**Subject area:** Electrical Engineering

**Version:** 11

**Applies from:** 2014-01-20

**Approved:** 2013-11-06

#### 1 Course title and credit points

The course is titled Computer- and Telecommunication/Data- och telekommunikation and awards 7,5 ECTS credits. One credit point (högskolepoäng) corresponds to one credit point in the European Credit Transfer System (ECTS).

#### 2 Decision and approval

This course is established by School of Computing 2013-11-06. The course syllabus was revised by School of Computing and applies from 2014-01-20. Reg no: BTH-4.1.1-0794-2013

#### 3 Objectives

The purpose of this course is for the student to obtain basic knowledge of the subject data communications, specializing in Internet as well as an overview on the system level with GSM and future mobile telephone networks.

#### 4 Content

The course includes the following key elements:

- Overview of Computer Communication
- Internet Protocol stack
- Application layer
- Transport layer
- Network layer
- Link layer and different local area network (LAN) system
- Overview of mobile and wireless networking technologies

#### 5 Aims and learning outcomes

On completion of course the student will:

- understand basic principles for computer communication.
- understand how most common network application's communication protocols are structured.
- understand how Internet transport (TCP and UDP) is structured and what it provides.

- understand how routing and IP addressing works
- know how switching works.
- understand what services data link layer provides
- be able to implement a client-server application.
- able to explain the advantages and disadvantages of wireless networking.
- understand how the protocols for wireless networks (802.11) works.
- understand how mobile networks are built.
- understand how the protocols work to have Internet access from a mobile terminal.

#### 6 Generic skills

#### 7 Learning and teaching

Teaching consists of lectures and laboratory exercises. During the lectures the different theories on how Internet is structured are discussed and the theories is then applied in laboratory work. Swedish

#### 8 Assessment and grading

##### Examination of the course

Code	Module	Credit	Grade
1405	Laboration	3 ECTS	G-U
1415	Assignments	0.5 ECTS	G-U
1425	Written Exam[1]	4 ECTS	A-F

<sup>1</sup> Determines the final grade for the course, which will only be issued when all components have been approved.

The course will be graded A Excellent, B Very good, C Good, D Satisfactory, E Sufficient, FX Fail, supplementation required, F Fail. The examination is made by written exam, assignments as well as presentation of the mandatory laboratory assignments.

#### 9 Course evaluation

The course coordinator is responsible for systematically gathering feedback from the students

in course evaluations and making sure that the results of these feed back into the development of the course.

**10 Prerequisites**

Completed course in programming 7,5 ECTS credits.

**11 Field of education and subject area**

The course is part of the field of education and is included in the subject area Electrical Engineering.

**12 Restrictions regarding degree**

The course cannot form part of a degree with another course, the content of which completely or partly corresponds with the contents of this course.

**13 Additional information**

Replaces ET1109 and ET1417.

**14 Course literature and other teaching material**

Titel: Computer Networking: A Top-Down Approach (2013), Sixth Edition, Författare: James F. Kurose and Keith W. Ross Förlag: Pearson, ISBN 978-0-273-76896-8.

