1. Fastställande

Utbildningsområde: Naturvetenskapligt 100 %
Ansvarig institution: Data- och informationsteknik

2. Inplacering
The course is a part of the Computer Science Bachelor’s programme and an elective course at the University of Gothenburg. The course is also offered as an elective course in the Computs Science Master's programme and in the Software Engineering Master's programme.

Huvudområde
Datavetenskap

Fördjupning
G1F, Grundnivå, har mindre än 60 hp kurs/er på grundnivå som förkunskapskrav

3. Förkunskapskrav
The requirement for the course is to have completed the first year at the Computer Science Bachelor’s programme or equivalent.

4. Innehåll
In the study of protocols, we start with application level protocols enabling students to start with more familiar paradigms in the context of applications that we use regularly. Moving to lower layers later in the course, we have the possibility to gradually uncover network services, their functionality and the ease/difficulty for achieving them.

Topics covered include: networking applications, content distribution, HTTP, SMTP, TCP, UDP, performance and congestion analysis, IP, switching, routing, mobile IP, local area networks, multiple access protocols (IEEE 802.X and others), wireless networks, bridges, physical media, error-detection and correction, and network security.
Delkurser
Laboration (Laboratory work), 2.0 hp Betygsskala: Underkänd (U), Godkänd (G)
Tentamen (Written exam), 5.5 hp Betygsskala: Underkänd (U), Godkänd (G), Väl godkänd (VG)

5. Mål
After completing the course the student is expected to be able to:

5.1. Knowledge and understanding
• distinguish the different network layers, their services and the related protocols
• exemplify and define the major problems in each of these
• explain possible solutions and solutions adopted in today's networks (e.g. in the Internet)
• clarify how constraints in the currently existing solutions can place obstacles to other options for solving the main problems.

5.2. Skills and abilities
• Build and configure a working network and have an understanding of computer configuration and routing issues in networks.

5.3. Judgement and approach
• demonstrate gained experience by doing practical work and apply the knowledge in realistic situations.

6. Litteratur
See separate literature list.

7. Former för bedömning
The course is examined by compulsory homework assignments, Lab work (2.0hecs in total) and an individual final written hall exam (5.5hecs). The lab work is normally carried out in groups of two.

Passing the home assignments and Lab work are prerequisites to passing the final exam. Practical assignments are included to help students understand protocols and to practically use network equipment.

A student who has failed the same examination twice has the right to request of the department a change of examiner. The request is to be in writing and submitted as soon as possible. The department is to grant such a request without undue delay.

In cases where a course has been discontinued or major changes have been made a student should be guaranteed at least three examination occasions (including the ordinary examination occasion) during a time of at least one year from the last time the course was given.

8. Betyg
Betygsskalan omfattar betygsgraderna Underkänd (U), Godkänd (G), Väl godkänd (VG).
To be awarded the grade Pass for the course, the student must pass both the exam and the laboratory part with the grade (G). To be awarded Pass with distinction, (VG) the student must receive a VG for the exam and get the grade G for the laboratory part. In both cases, the home assignments have to be approved.
9. Kursvärdering
The course is evaluated through meetings both during and after the course between teachers and student representatives. Further, an anonymous questionnaire can be used to ensure written information. The outcome of the evaluations serves to improve the course by indicating which parts could be added, improved, changed or removed.

10. Övrigt
Undervisningsspråk: engelska.