



LUNDS UNIVERSITET
Lunds Tekniska Högskola

Course syllabus

Kommunikationssystem och nätverk **Communication Systems and Networks**

ETSF15, 5 credits, G2 (First Cycle)

Valid for: 2023/24

Faculty: Faculty of Engineering, LTH

Decided by: PLED C/D

Date of Decision: 2023-04-18

General Information

Main field: Technology.

Compulsory for: E3

Language of instruction: The course will be given in Swedish

Aim

The course introduces the area of communication, with the purpose to make the student understand the needs for and principles of a communication system on different levels, including the physical layer.

Learning outcomes

Knowledge and understanding

For a passing grade the student must

- be able to account for the need of protocols in a communication system
- be able to motivate and describe the consequences of using hierarchical reference models
- be able to understand the possibilities and limitations in different layers of a communication system

Competences and skills

For a passing grade the student must

- be able to synthesize and practically implement protocol functions based on specifications and limitations

Judgement and approach

For a passing grade the student must

- be able to compare and assess pros and cons of different strategies of realizing components in a communication system

Contents

The course gives a broad overview of the principles and techniques for modern communication systems. The knowledge is built by the students actively investigating how simple platforms can be made to communicate with each other under varying degrees of difficulty (choice of transmission medium and modulation, broken links, resource sharing, congestion etc). Then, a theoretical explanation and augmented solution for general cases is presented. A recurring element in the course is how the same principles can be used to solve problems on several different levels in the communication system, and the need to establish protocols for communicating.

Examination details

Grading scale: TH - (U,3,4,5) - (Fail, Three, Four, Five)

Assessment: Written examination. Laboratory lessons.

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with a form of examination equivalent to that of a student without a disability.

Parts

Code: 0118. **Name:** Communication Systems and Networks.

Credits: 3. **Grading scale:** TH. **Assessment:** Written exam.

Code: 0218. **Name:** Laboratory Work.

Credits: 2. **Grading scale:** UG. **Assessment:** Laboratory work.

Admission

Assumed prior knowledge: Basic knowledge in programming.

The number of participants is limited to: No

The course overlaps following course/s: ETS052, EITA55, EITF45, EITF25, ETS130

Reading list

- Maria Kihl, Jens A. Andersson: Datakommunikation och Nätverk (upplaga 2). Studentlitteratur, 2020, ISBN: 9789144135021.

Contact and other information

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Course homepage: <http://www.eit.lth.se/course/etsf15>