



Course syllabus

Faculty of Technology

Department of Computer Science and Media Technology

1DV721 Systemadministration, 7,5 högskolepoäng

Systems administration, 7.5 credits

Main field of study

Computer Science

Subject Group

Informatics/Computer and Systems Sciences

Level of classification

First Level

Progression

G1F

Date of Ratification

Approved by Faculty of Technology 2021-06-21

The course syllabus is valid from spring semester 2022

Prerequisites

Introduction to programming (1DV501), 7.5 credits, Computer Security (1DV700) 7.5 credits and Operating systems (1DV512) 7.5 credits or equivalent

Objectives

After completing the course, students are expected to be able to:

Knowledge and understanding

- A.1 describe the major parts of a modern unix-like system and its services, and
- A.2 explain common networking equipment, such as routers, their properties and how they are used in models and real computer networks,

Competence and skills

- B.1 setup and administer a modern Unix-like system and common services, such as http and dns,
- B.2 analyze needs, formulate requirements and implement smaller complex networks,
- B.3 troubleshoot networks and servers, and
- B.4 identify and solve security issues in servers, services, and networks.

Judgement and approach

- C.1 reason about the choices made for different system and security solutions

Content

The following parts are addressed:

- System administration
- Fundamentals of modern Unix-like systems
- Shell scripting
- Automation of daily management tasks
- Installation and configuration of services
- Network equipment (hub, switch, router)
- TCP/IP, IP nets, IP subnets, VLAN
- Routers (remote and local), function and configuration
- Network and server planning
- Network administration (SNMP, RMON)
- Security threats and tools

Type of Instruction

The teaching takes place in the form of lectures, teacherled laboratory work and supervision in a project group. The labs are individual, the project take place in pairs.

Examination

The examination of the course is divided as following:

Code	Appellation	Grade	Credits
2201	System administration lab assignment Network administration lab	U/G	1.50
2202	assignment	U/G	1.50
2203	Project	AF	2.00
2204	Oral exam	AF	2.50

The course is assessed with the grades A, B, C, D, E, Fx or F.

Assessment of the student's performance is made through written laboratory and project reports and with an oral examination. To pass the course you need to pass the laboratory assignments and get at least grade E on the project and the oral exam. The final grade is a weighted grade between the following parts:

- Project, 50%
- Oral exam, 50%

Repeat examination is offered in accordance with Local regulations for courses and examination at the first and second-cycle level at Linnaeus University.

If the university has decided that a student is entitled to special pedagogical support due to a disability, the examiner has the right to give a customised exam or to have the student conduct the exam in an alternative way.

Objectives achievement

The examination parts are linked to the learning outcomes as follows:

Goal	2201	2202	2203	2204
A.1	✓			✓
A.2		✓		✓
B.1	✓		✓	
B.2		✓	✓	

B.2		✓	✓
B.3	✓	✓	✓
B.4	✓	✓	✓
C.1			✓

Course Evaluation

During the implementation of the course or in close conjunction with the course, a course evaluation is to be carried out. Results and analysis of the course evaluation are to be promptly presented as feedback to the students who have completed the course. Students who participate during the next course instance receive feedback at the start of the course. The course evaluation is to be carried out anonymously.

Credit Overlap

The course cannot be included in a degree along with the following courses of which the content fully, or partly, corresponds to the content of this course: 1DV720 Server administration (3 credits) and 1DV702 Network - administration (3 credits)

Required Reading and Additional Study Material

Limoncelli, Thomas A.; Hogan, Christina J.; Chalup, Strata R. *The Practice of System and Network Administration*, AddisonWesley Professional, latest edition. Pages: 500 of 1011.

McCabe J, *Network Analysis, Architecture and Design* 3 ed. Morgan Kaufmann, 2007, ISBN 9780123704801, Pages: 300 of 496.

Department of Computer Science and Media Technology, Distributed material. Pages: 100