JÖNKÖPING UNIVERSITY
School of Engineering

Study guide

Networkprogramming

(Nätverksprogrammering)

Course name:	Networkprogramming (Nätverksprogrammering)
Ladok code:	TNPK18
Credits:	7.5
Year:	2024
Course coordinator:	Johannes Schmidt
Examiner:	Johannes Schmidt
Canvas event:	Network Programming – NetProg 2024

1 TEACHERS

Johannes Schmidt

Course coordinator, examiner, lecturer, lab assistant

Contact details

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2 INTRODUCTION

This course introduces the student to fundamental concepts and technologies of networking with a focus on software and programming (rather than a focus on hardware).

3 INTENDED LEARNING OUTCOMES

The intended learning outcomes of the course are found in the course syllabus in force (see http://kursinfoweb.hj.se/course_syllabuses/TNPK18.pdf) and are described under the next heading.

Knowledge and understanding

1. Display understanding of how various Internet services are implemented on protocol level
2. Display understanding of how Network Address Translation (NAT), methods to implement NAT, and methods for NAT-traversal work
3. Display understanding of how secure communication can be established with authentication and encryption
4. Display understanding of data compression principles and how well different types of data can typically be compressed
5. Display understanding of decentralized Internet services

Skills and abilities

6. Display ability to program client software for Internet services
7. Display ability construct server-push-based applications

Judgement and approach

8. Display ability to compare and choose appropriate architectures and communication protocols for different applications

4 EXAMINATION, ILOS AND LEARNING ACTIVITIES

4.1 DESCRIPTION OF THE ELEMENTS THAT EXAMINE THE COURSE ILOS, AND THE CORRESPONDING LEARNING ACTIVITIES

Intended learning outcomes	Examined elements	Learning activities
ILO 1	Written digital exam, labs	Lectures, labs
ILO 2	Written digital exam	Lectures
ILO 3	Written digital exam, labs	Lectures, labs
ILO 4	Written digital exam, labs	Lectures, labs
ILO 5	Written digital exam	Lectures
ILO 6	Written digital exam, labs	Lectures, labs
ILO 7	Written digital exam, labs	Lectures, labs
ILO 8	Written digital exam	Lectures

4.2 INFORMATION TO STUDENTS

The lab assignments will be carried out and examined individually. Instructions for the lab assignments will be available on Canvas. The lectures happen on campus. The labs happen on campus (confer the schedule for locations). Beyond lectures and labs, it is highly recommended to read the course literature, especially sections that are referred to in lecture or lab material.

4.3 CONDITIONS FOR THE EXAMINED ELEMENTS

Lab assignments

The lab assignments need to be submitted in electronic form via Canvas AND orally presented to your lab assistant (if not indicated otherwise). The following table gives a (preliminary) recommendation in which week to work on which labs.

Week	Labs
43	1,2
44	3,4
45	5,6
46	7,8
47	9,10
48	11,12
49	
	4 optional labs will be provided, too

The optional labs will give extra points (as indicated on the corresponding instructions) if submitted and presented before the exam. These extra points will give a bonus on the exam.

Examination

The written examination is an anonymously graded digital exam (inspera). The first occasion is usually scheduled for December (week 50). The exact date will be set by the Student Service department. The JTH's examination schedule is available here.

4.4 RE-EXAMINATION OF THIS COURSE

The written examination will have two re-examination occasions during the next year. The exact dates will be set by the Student Service department. The JTH's examination schedule is available here.

During these re-examination weeks lab submissions and resubmissions will be accepted as well.

5 GRADING CRITERIA

The course is graded 5,4,3 or Fail. The course consists of the following two examination elements.

Examination element	Credits	Grades
Written exam	5	5/4/3/Fail
Lab assignments	2.5	Pass/Fail

The exam grade determines the final grade of the course. It can only be obtained, however, if all lab assignments are passed.

6 COURSE LITERATURE AND OTHER TEACHING AIDS

TCP/IP Protocol Suite, Behrouz Forouzan, McGraw-Hill, ISBN: 978-0073376042

Available at JU-library.