
Exam DM557

Time and Place

Time Thursday January 16th. (Expected start 8.30 - official sent by administration)
Friday, January 16th (Expected start 8.30 - official sent by administration)
Monday, January 20th. (Expected start 8.30 - official sent by administration)
Tuesday , January 21th. (Expected start 8.30 - official sent by administration)
Place U170

Even through the expected total examination time per student is 20-25 minutes (see below), it is not possible to calculate the exact examination time from the placement in the sequence, since students earlier on the list may not show up. Thus, students are expected to show up plenty early. In principle, all students who are taking the exam on a particular date are supposed to show up when the examination starts, i.e., at the time the first student is scheduled. This is partly because of the way external examiners are paid, which is by the number of students who show up for examination. For this particular exam, we do not expect many no-shows, so showing up 2 hours before the estimated time of the exam is likely safe.

Procedure

The exam is in English or Danish, chosen by the student. When it is your turn for examination, you will draw a topic. Note that you have no preparation time. The list of topics can be found below. Then the actual exam take place. This part lasts approximately 18 minutes. You should start by presenting material to the topic you drew. Aim for a reasonable high pace and focus on the most interesting material related to the question. You are not supposed to use note material, textbooks, transparencies, computer etc. You are however encouraged to use the blackboard.

You are allowed to bring keywords for each question, such that you can remember what you want to present during your presentation. As a guideline you are expected to not have more than 10-15 keywords per topic on the list, that you bring to the oral exam. Note that this list is expected to be put on the table during your oral exam.

We, the examiner and the censor, will supplement with specific questions when appropriate, and after a while, we will end the discussion of the exam topic you drew and turn to material from other parts of the curriculum. Note that all of this as well as discussion between examiner and censor about the grade is included in the 20-25 minutes, so do not count on more than 10 minutes for your own presentation.

Some of the topics below are very broad, so you must select the material you chose to cover. You will of course also be evaluated based on your selection of material. If you only present the simplest material, you limit the grade you can obtain. On the other hand a good presentation of the simple material is better than a very poor presentation of the harder material. We might of course still ask you questions about material that you have decided to skip.

Topics

1. Functionality and interfaces for the application layer of the TCP/IP model and the functionality of DNS
2. Functionality and interfaces for the transport layer of the TCP/IP model and the difference between UDP and TCP
3. Functionality and interfaces for the network layer of the TCP/IP model with focus on the data plane.
4. Functionality and interfaces for the network layer of the TCP/IP model with focus on the control plane.
5. Functionality and interfaces for the link layer of the TCP/IP model, including error detection and correction
6. Symmetric and public key cryptography, Key distribution and User authentication
7. Security: Transport- and Network-layer security
8. Security: Firewalls, intrusion detection
9. Mobility, Wireless networks and Wireless security
10. Penetration Testing: Planning and Methods

Curriculum

- Chapters 1-8 in **Computer Networking, A Top-Down Approach Global Edition, 7th Edition**, James F. Kurose and Keith W. Ross.
- **BSI - Study A Penetration Testing Model** By the German Office for Information Security.
- **Owasp Top 10 - 2017** By The Open Web Application Security Project (OWASP).
- Slides from lectures, weekly notes and problems discussed in tutorial sessions