

Exam DM510 Operating Systems (2023)

Time and Place

Time: June 19th (starting 13:40), June 20th (starting 8:30), June 21st (starting 8:30).

Place: the place for June 19th is still to be determined, on June 20th and 21st the exam will be in O NAT Imada Mødelokale 3 (Ø9-601a-2) (to be confirmed in the official announcement of the oral exam schedule in itslearning).

Procedure

The exam questions will be posed in English.

The exam procedure is as follows:

When it is your turn for examination, you will draw a question. Note that you have no preparation time. The list of questions can be found below. Then the actual exam takes place. This part overall lasts approximately 20-23 minutes. You should start by presenting material related to the question 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 should ensure that during the exam you will be able to draw and sketch figures and write text. You can choose any technical setup you like - also using a webcam to film a piece of paper is fine. Please make sure you tested your setup in order to not lose time during the exam.

You are allowed to use a list of 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 keywords per question on the list. Note that this list is expected to be put on a piece of paper and you should not use any other material during the 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 question that 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 scheduled to last not more than 25 minutes, so do not count on more than 9-11 minutes for your own presentation. You will be interrupted after 11 minutes.

Please note, that some of the questions below are very broad, so you must select the material you choose 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.

Curriculum

The curriculum consists of two parts. 1.) From the course book (Abraham Silberschatz, Peter Baer Galvin, and Greg Gagne: Operating Systems Concepts, 10th edition, International Version) the curriculum includes basically Chapters 1-18 omitting the exercises and projects at the end of each chapter. 2.) In addition the curriculum contains the required mandatory assignments, the Weekly Notes, as well as the exercises from the Weekly notes.

Questions

1. Operating-System Structures (Chapter 2)
2. Processes and Threads and Concurrency(Chapter 3 and 4)
3. CPU Scheduling (Chapter 5)
4. Synchronization Tools and Synchronization Examples (Chapter 6 and 7)
5. Deadlocks (Chapter 8)
6. Main Memory (Chapter 9)
7. Virtual Memory (Chapter 10)
8. Mass Storage Systems (Chapter 11)
9. File System Interface (Chapter 13)
10. File-System Implementation, File System Internals, and I/O Systems (Chapter 12, 14, and 15)
11. Security and Protection (Chapter 16 and 17)
12. Virtualization (Chapter 18)