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## Report - IL2236 - 2021-07-02

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Respondents: 1  
Answer Count: 1  
Answer Frequency: 100.00%

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Please note that there is only one respondent to this form: the person that performs the course analysis.

**Course analysis carried out by (name, e-mail):**

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**DESCRIPTION OF THE COURSE EVALUATION PROCESS**

**Describe the course evaluation process. Describe how all students have been given the possibility to give their opinions on the course. Describe how aspects regarding gender, and disabled students are investigated.**

The course evaluation was a continuous process, by asking students' feedback throughout the course offering, in particular, collecting feedback from students after lectures and from course meetings with course representatives.

The course evaluation survey was conducted online and open to all students for two weeks from 2021-06-02 to 2021-06-15, right after the written examination on 2021-06-01. The survey uses the standard LEQ questionnaire from KTH. The answers are anonymous. Besides automatic reminders sent from the system, I also sent a few emails to remind students to complete the survey.

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**DESCRIPTION OF MEETINGS WITH STUDENTS**

**Describe which meetings that has been arranged with students during the course and after its completion. (The outcomes of these meetings should be reported under 7, below.)**

I used to meet students about 30 minutes after each and every lecture to answer their questions and receive feedback. All students were welcome to ask questions and give comments on lectures and any of the course activities.

I formed a course committee including three student representatives, the teaching assistant, another teacher in the teacher team, and me. We had two course committee meetings, each run for one hour. One meeting was arranged in the middle of the course, and another after the course evaluation survey.

Other meetings were arranged on demand as requested from students by email.

Furthermore, a specific meeting was also organized before the examination to give information about the examination and answer questions from students.

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### **COURSE DESIGN**

**Briefly describe the course design (learning activities, examinations) and any changes that have been implemented since the last course offering.**

Being a mature course, the course structure has no change. It consists of 3 modules, each with 4 lectures. It includes 3 home assignments and one mini-project as the fourth assignment. Each home assignment had a corresponding student recitation session. The teaching assistant was leading the student recitation sessions.

The examination includes two parts: Home assignment and project work, as well as the written examination.

Compared to the previous course offering, the course materials were under continuous improvement. I have added more explanatory materials and examples in lectures about network performance, QoS, network and protocol deadlock etc. More information and clarifications about home works and the mini-project were given to students. The teaching assistant gave more guidance to students who encountered difficulties in the assignments, in particular, the mini-project. The mini-project was again a group assignment, which facilitated peer learning and cooperation, and was shown again to be more effective than individual work.

### **THE STUDENTS' WORKLOAD**

**Does the students' workload correspond to the expected level (40 hours/1.5 credits)? If there is a significant deviation from the expected, what can be the reason?**

The 7.5-credit course run for 10 weeks from start (week 12) to end (first examination in week 22). The nominal workload for each student is 20 hours per week (40 hours of full-time study for 1.5 credits, 200 (40 x 5) hours for 7.5 credits).

There were 32 students registered for the course. 17 students answered the survey. The answer ratio is  $17/32 = 53.13\%$ . For the workload question, 16 students answered.

The weighted average of workload is calculated via picking up the middle value in each scale. For example, the middle value of scale 21-23 hours is 22 hours.

Weighted workload in hours =  $(1*28+3*25+2*19+2*16+4*13+4*10)/16=16.56$  hours. Considering variations in estimation accuracy and individual differences, the workload is generally reasonable. One point is that some students might have not counted the scheduled hours. Compared with last year, which was 17.1 hours, is on the same level.

### **THE STUDENTS' RESULTS**

**How well have the students succeeded on the course? If there are significant differences compared to previous course offerings, what can be the reason?**

There were 32 students taking the course. Only one student has not completed the Home Assignment part. All others passed.

The first written examination was carried out on June 1, 2021. 30 students attended the first examination. The results were quite good. 7A, 10B, 7C, 5D, 1E. No students failed.

Compared with the previous year, a larger percentage of students got A and B. The reason is because this year we introduced bonus points into the examination, to encourage students do a good home work and thus make a good preparation for the written examination. As many as 4 bonus points can be added on to the examination results. This has helped many students to pass a certain threshold for a certain grade. For example, if no bonus, only 3 students got A. With bonuses, 7 students passed the threshold and got A.



## STUDENTS' ANSWERS TO OPEN QUESTIONS

### What does students say in response to the open questions?

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The following lists all responses to the four open questions in the questionnaire.

+ What was the best aspect of the course?

- \* Overall and detailed perspective
- \* The order of the chapters & lecture makes it very clear. The labs were very exhaustive. And the link with industry very interesting.
- \* The mini-project is a really good part which helps me practice the theory and solid them.
- \* New content that other courses are not included
- \* The subject is cool.
- \* Exercise sessions are helpful
- \* The topic was very interesting.
- \* I could have many opportunities to ask questions and get feedback.

+ What would you suggest to improve?

- \* Nothing
- \* The miniproject felt a bit like a lot of small tasks to do without the real need to understand (or maybe saw it in the wrong way). Maybe giving more responsibility on the miniproject, with more open and completes questions/investigations rather than small tasks.
- \* More specific of examples in lectures
- \* The exam could be similar to the exercises. Currently I think the exam focus more on concepts.
- \* More documentation for the mini-project
- \* Examination, and examples and exercises on topologies.
- \* I think if more examples included are better.

+ What advice would you like to give to future participants?

- \* Always reflect
- \* To take the course in order and up-to-date since the logical path is very clear and useful.
- \* Just follow the lecture and spend more time on the exercises and project.
- \* Be more active
- \* Read the reading list carefully

+ Is there anything else you would like to add?

- \* Nothing
  - \* I didn't expect at all this course to be 100% network and mainly theory (since I already had a course with you I expected some VHDL coding as in Hardware Architecture for Deep Learning). But it's my fault I didn't read very well, and anyways I was very happy about the content of the course. Networking courses are usually not my favorite but for any embedded system student that is interested in networking and how things works the content of the course is perfect.
  - \* I'd love to apply the content of the course in hardware description languages one day.
  - \* Thanks !
  - \* The teaching assistant is really kind and helpful, and he helps me a lot when I got trouble in the courses.
  - \* No
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## SUMMARY OF STUDENTS' OPINIONS

### Summarize the outcome of the questionnaire, as well as opinions emerging at meetings with students.

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The course evaluation survey uses KTH LEQ (Learning Experience Questionnaire) v3.1.14, which has 22 questions, each with a score range from 1 to 7. Higher score, better. The average value of the average scores for all the 22 questions is 6.4 out of 7.

To show details of the responses, the following lists the average score for each of the 22 questions. Question 5 has an average score of 5.9, which is the only one with a score less than 6. The reason is not surprising. Due to the pandemic, the course round was offered online. Consequently the belongingness was affected to a certain degree, but not too bad.

#### + Meaningfulness - emotional level

##### \* Stimulating tasks

1. I worked with interesting issues (6.5)

##### \* Exploration and own experience

2. I explored parts of the subject on my own (6.4)

3. I was able to learn by trying out my own ideas (6.4)

##### \* Challenge

4. The course was challenging in a stimulating way (6.4)

##### \* Belonging

5. I felt togetherness with others on the course (5.9)

6. The atmosphere on the course was open and inclusive (6.7)

#### + Comprehensibility - cognitive level

##### \* Clear goals and organization

7. The intended learning outcomes helped me to understand what I was expected to achieve (6.4)

8. The course was organized in a way that supported my learning (6.5)

##### \* Understanding of subject matter

9. I understood what the teachers were talking about (6.4)

10. I was able to learn from concrete examples that I could relate to (6.4)

11. Understanding of key concepts had high priority (6.6)

##### \* Constructive alignment

12. The course activities helped me to achieve the intended learning outcomes efficiently (6.5)

13. I understood what I was expected to learn in order to obtain a certain grade (6.3)

##### \* Feedback and security

14. I received regular feedback that helped me to see my progress (6.2)

15. I could practice and receive feedback without being graded (6.4)

16. The assessment on the course was fair and honest (6.6)

#### + Manageability - instrumental level

##### \* Sufficient background knowledge

17. My background knowledge was sufficient to follow the course (6.4)

##### \* Time to reflect

18. I regularly spent time to reflect on what I learned (6.1)

##### \* Variation and participation

19. The course activities enabled me to learn in different ways (6.3)

20. I had opportunities to influence the course activities (6.2)

##### \* Collaboration

21. I was able to learn by collaborating and discussing with others (6.4)

##### \* Support

22. I was able to get support if I needed it (6.8)

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## OVERALL IMPRESSION

**Summarize the teachers' overall impressions of the course offering in relation to students' results and their evaluation of the course, as well as in relation to the changes implemented since last course offering.**

Despite the pandemic, the course has been offered successfully. The students were active in the various course activities. They spent good efforts on the course (perhaps due to limited mobility). As with the previous year, the course provided both online lecturing and off-line video recordings to help out all students, making synchronized and un-synchronized learning possible. The increased accessibility has allowed students to learn in a more flexible way. The newly added materials and explanations have helped to clarify more details in the course content. The meetings with students were effective and helpful. As a result, the students showed good performance in home assignments and the examination. From the survey conducted right after the examination, the student evaluations were very positive, as indicated by an average score of 6.4 out of 7, 91.4%, for all questions.

## ANALYSIS

**Is it possible to identify stronger and weaker areas in the learning environment based on the information you have gathered during the evaluation and analysis process? What can the reason for these be? Are there significant difference in experience between:**

- students identifying as female and male?
- international and national students?
- students with or without disabilities?

The course has shown strong in various aspects, as indicated by the average score 6.4 out of 7. The stronger areas, which scored 6.5 or above, are the following 7 out of 22 (31.8%) areas per student responses.

1. I worked with interesting issues (6.5)
6. The atmosphere on the course was open and inclusive (6.7)
8. The course was organized in a way that supported my learning (6.5)
11. Understanding of key concepts had high priority (6.6)
12. The course activities helped me to achieve the intended learning outcomes efficiently (6.5)
16. The assessment on the course was fair and honest (6.6)
22. I was able to get support if I needed it (6.8)

The weak area is the belongingness as shown by "Q5. I felt togetherness with others on the course", which scored 5.9 on average. This was apparently due to the pandemic.

Responses per gender: similar.

Two comments: one is "No comment", the other "Nothing to notice".

Responses per type of students: similar to the overall polar diagram.

Two comments: one from an international master student saying "This course is more specific", and the other from an international exchange student saying "I was happy to participate to a course that I couldn't have done in my home university. The content is very interesting and it was a great course to finish my exams in KTH."

Responses per disability: Only two funk students in the class. No comparison shown in the polar diagram, as noted in the questionnaire, "A group has to include at least 3 respondents in order to appear in a diagram."

One comment: "No comment".

## PRIORITIZED COURSE DEVELOPMENT

**What aspects of the course should be developed primarily? How can these aspects be developed in short and long term?**

The course has been a mature course. From the course survey, the students were very satisfied with the course. From the student feedback, they wanted to see more examples in some course content (e.g. network topology) to help their understanding and more exercises to practice. This aspect can be further improved.

## OTHER INFORMATION

**Is there anything else you would like to add?**

Like the previous course round, this course edition in Spring 2021 was offered remotely online due to Covid-19. All activities (lectures, exercise sessions, meetings, examination etc.) were conducted online.