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## Report - ID2201 - 2018-12-05

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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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**COURSE DESIGN**

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

The course covers fundamental models for distributed systems, inter-process communication and how to handle synchronization, consistency, replication, fault tolerance and security in a distributed system. The course consists of a series of lectures (14) and practical homework assignments to be presented and demonstrated in person to course teaching assistants. The assignments are programming tasks that exemplify problem statements examined in the course.

Course Layout includes 14 lectures, 5 homework programming assignments and a written exam.

The course content is divided into 6 modules (and corresponding lectures)

1. Foundations

- Introduction. Erlang. Networks and Interprocess Communication. Remote Invocation. Indirect Communication.

2. System Services

- File Systems and Name Services. Blockchain.

3. Distributed Algorithms

- Time. Global State. Coordination and Agreement

4. Shared Data

- Transactions and Concurrency Control. Distributed Transactions. Replication.

5. Peer-to-Peer Systems

- Distributed Hash Tables

6. Consensus Protocol

- Paxos Consensus Protocol. Summary of the course

Topics of homework assignments

- Erlang - hands-on exercise on Erlang programming (not mandatory)
- Rudy - a small web server
- Routy - message routing
- Loggy - logic time logger
- Groupy - group communication
- Chordy - a distributed hash table

Examination consists of programming assignments (LAB1) and a written examination (TEN1) that corresponds to two LADOK parts

LAB1 - Laboratory Work (1.5 hp), grade scale: P, F

TEN1 - Written exam (6.0 hp), grade scale: A, B, C, D, E, FX, F

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### 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?**

Most of the students commented that the workload was rather high especially lab assignments. However they indicate that the assignments were good and very useful for understanding of concepts and getting practical (programming) skills. In my view, the main reason for high amount of work/time on programming assignments was that most of the students were new to the Erlang programming language used to implement the assignments. It is reasonable to consider to allow students to choose a language, e.g. Java, Python, Erlang, C/C++, to implement the programming assignments. Note though that student were given fragments of Erlang code for each of the assignment as a baseline for implementation.

### 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?**

The students performed rather well in both reporting homework (67% of registered students have completed on time that is the same number as last year) and written exam (85% passed on first exam attempt - similar to the last year).

### 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.**

In general, the students are very satisfied with the course.

### 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?

Strong

- (Meaningfulness) All students reflected that they work with interesting issues in the course, and the course challenging in a stimulating way; The atmosphere was open and inclusive
- (Comprehensibility) Most (if not all) students indicated that goal and ILOs of the course was clearly specified; good understanding of subject matter and examination requirements.
- Help seminars were good support for working on programming assignment and understanding of connects, methods and algorithms used in the assignments.

Weak

- Students have indicated rather low opportunities to influence the course activities;
- "Time left after each lab was not enough" (to reflect on it?)
- Students have complained that the course requires much work (highly inventive).
- Assignments specification should be improved to avoid possible misunderstanding.

### 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 contents, structure/outline are quite stable now. Some suggestions for further improvements are as follows.
- Record all lectures in the form of video-lecture either in advance or during the next occasion, especially video (hands-on) tutorial on Erlang.
  - Revise lecture slides to make some of them more comprehensive.

### OTHER INFORMATION

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

Thanks all students who have participated in the course evaluation and for their constructive feedback.