Course Analysis for "Deep Learning, Advanced" (6 HP) VT20
DD2412/FDD3412

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Forms of Assessment

The course contains two examination components
- **LAB1:** which consists of writing assignments on the different topics of the course, the assignments are individual and are graded in P/F/Fx
- **TEN1:** which corresponds to a final implementation project, in a group of 3 for master students (DD2412) and 1-3 for doctoral students (FDD3412). The projects are graded in A-F/Fx.

Participation and Graduation Statistics

Number of registered 2nd-cycle students (DD2412): 104
Number of registered 3rd-cycle students (FDD3412): 14
Number and rate of graduated 2nd-cycle students (DD2412): 89 (**86%**)
Number and rate of graduated 3rd-cycle students (FDD3412): 11 (**79%**)
Grades distribution for passing 2nd-cycle students (DD2412): **A**(51, **49%**), **B**(20, **19%**), **C**(17, **16%**), **D**(2, **2%**), **E**(0, **0%**)

Summary of course evaluation

Course evaluation format: 22 Standard LEQ Statement Questionnaire
Participation rate: 14% (14 responded out of 102 invited)
Course load on the students: Figure 1 shows the distribution of the course load in week/hours.
General evaluation: As can be seen in Figure 2, in general, students agree with all the 22 LEQ statements with varying degrees from weak agreement (4 statements got rounded average of 5) to moderate (17 statements got rounded average of 6) and strong agreement (1 statement got rounded average of 7).
Diversity: There is not a significant difference based on gender although female respondents have slightly more number of strong agreements (3 statements) than male respondents (1 statement). There seems to be a significant difference between international and domestic students' responses though where the agreement of international students is higher in 20 out of 22 LEQ statements.
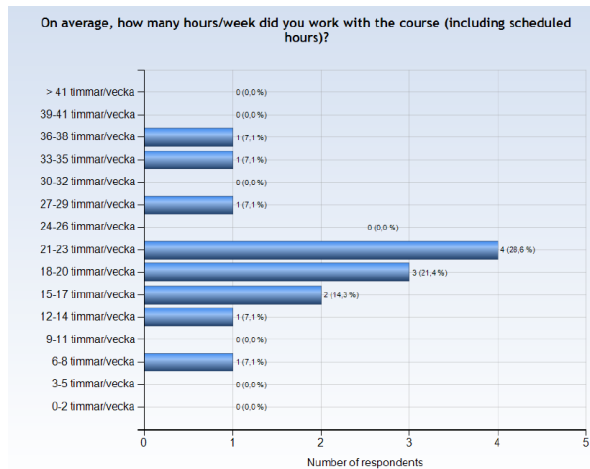
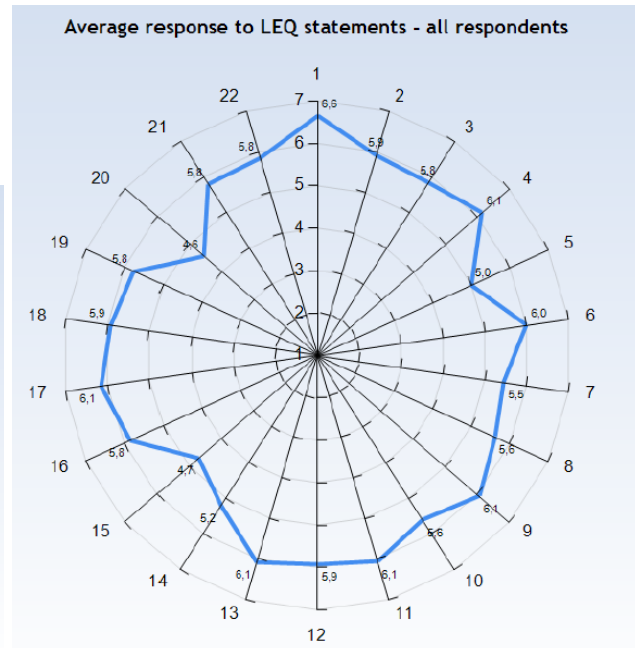# Important Figures

Figure 1: coursework statistics per week

Figure 2: average agreement level for LEQ statements

Course Analysis

Course load for students: While the spread of the course load among students is relatively large, the average is about 18 hours which is in the correct ballpark of a 6HP course running over 1 period. The spread is also expected as this is an advanced course and requires different levels of preparation depending on the suitability of the participating students' backgrounds.

Notable positive points: it seems, in general, the students were satisfied with the content and format of the course. They mentioned that they "worked with interesting issues" (level of agreement: 6.5/7), liked the atmosphere of the course and strongly agreed (6/7) that "The atmosphere on the course was open and inclusive". Furthermore, in the comments section many students considered the following the best aspects of the course: a) the reproducibility challenge b) having to read and familiarize with state-of-the-art papers in deep learning c) lectures content and presentations, d) openness of writing and project assignments.

Notable points of improvements:
- the workload was still perceived as somewhat unbalanced (not as severe as in 2019).
- some students were missing some per-topic practical implementation exercises
- some students mentioned that they did not have enough time for the final project
- there was a slight decrease (0.1-0.2 out of 7) on average over all LEQ statemetns.

Teacher's view: the students' view in general remains at a similar positive level to last year with some slight decrease in the agreements' level. In 2020, we had COVID-19, with the course going entirely remote over zoom. On the negative side, I believe this significantly degraded the experience of the students for lectures, in-class peer-discussions, and "whiteboard Q&A". On the positive side, the course became more inclusive, I believe, and significantly more questions were asked during the zoom lectures compared to the normal lecture halls. The teacher suspects the decrease in the satisfaction of domestic students (compared to international students) might be related to the COVID-19 situation. Also, it should be noted that the course evaluation for 2020 has much lower turnout (14/102 of master students in 2020 compared to 40/80 of master students in 2019) which makes it hard to compare. However, interestingly, it is clear from the comments section that the complaint about less-clear grading , and breadth/depth balance have decreased considerably. However, it seems students still find the workload unbalanced and find it difficult to do the project in the allotted time.

There is no new point of improvement compared to the last which suggests there was no clear degradation. So, similar to the last year, the teacher absolutely agrees with all the remaining points of improvements. As all of them were anticipated, are lacking mainly due to the time constraints on both the teacher and TAs, and are planned to be mitigated in the future iterations.

Planned Measures for the next round

- Have the course run through two periods: P1 and P2
- Accordingly rearrange the lectures and assignments timeline
  - P1 will have all lectures covered, all writing assignments submission and correction deadlines, and the project proposal deadline.
  - P2 will have the students solely focusing on doing their final project which better distributes the load on both students and computational resources. Furthermore, it better matches the international reproducibility challenge that the students perceive as extremely positive.
- The grading will be systematically explained on canvas and in the first lecture according to KTH regulations and in consultation with the teachers of LH216V.
- Provide optional programming assignments to improve the practical coverage of the course.
- Provide a formative assessment through per-topic quizzes so that students can assess their high-level understanding of individual topics.

Proposal regarding potential changes to the course

- The course should become a 9-credit course and span two periods to cover more depth and spread the load more evenly.
- It should be graded as P/F or 3-scale grading since it is mainly a project course with open-ended objectives