Report - ID2214 - 2019-02-22

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

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):

Henrik Boström, bostromh@kth.se

COURSE DESIGN

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

The course was given for the first time, in period 2, 2018.

There were four group assignments (with up to four students in each group) and one written (individual) examination.
The first three assignments concerned implementation of various preprocessing and evaluation techniques, as well as learning algorithms, while the fourth and final assignment had the format of a research project, which required the students to identify a research question and was expected to result not only in implemented software, but also a research report.

THE STUDENT'S 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?

According to the course evaluation, there was a large span in the efforts put in by the students. About half of the 15 respondents have stated that they have spent more than 20 hours per week, while the other half (in some cases substantially) less.

One reason for the deviation may be the background of the students; some may already have extensive experience in Python programming, which means that they could focus on the algorithmic parts, while other students had to struggle with learning how to program in the for them new language.

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?

Of the 33 students that took part in the first written examination, 25 received the degree E or higher (76%). 39 students have passed the four assignments.

OVERALL IMPRESSION OF THE LEARNING ENVIRONMENT

What is your overall impression of the learning environment in the polar diagrams, for example in terms of the students' experience of meaningfulness, comprehensibility and manageability? If there are significant differences between different groups of students, what can be the reason?

There is not much that really stands out. The LEQ statements 4, 10 and 15 received slightly lower scores on average than the other LEQs and these are analyzed in more detail below (next item in the analysis).

ANALYSIS OF THE LEARNING ENVIRONMENT

Can you identify some stronger or weaker areas of the learning environment in the polar diagram - or in the response to each statement - respectively? Do they have an explanation?

Regarding the LEQ 15 ("I could practice and receive feedback without being graded"), I can partly agree with students who were less satisfied with this aspect, as the students were graded on all assignments. However, many students still took the opportunity to ask for feedback on their work before submitting it (which of course did not affect the grades). Consequently, there was no consensus among the students; five of the 15 students gave this LEQ one of the top two scores, while two students gave one of the two lowest scores.

Some of the lower scores on LEQ 4 ("The course was challenging in a stimulating way") may be due to that some students experienced a stressful situation, in particular when completing the final assignment, while at the same time studying for the exam (the deadline for the former was close in time to the latter). It should be noted though that there is a high degree of disagreement among the students; six of the 15 students gave this LEQ one of the top two scores, while three students gave one of the two lowest scores.

The lower scores for LEQ10 ("I was able to learn from concrete examples that I could relate to") could partly be due to that only one example examination was provided (and no earlier examinations have been given) as well as that the complexity of the code presented at lectures was less than what was requested for the assignments. Again, there was a high degree of disagreement among the students; six of the 15 students gave this LEQ one of the top two scores, while four students gave one of the two lowest scores.

ANSWERS TO OPEN QUESTIONS

What emerges in the students' answers to the open questions? Is there any good advice to future course participants that you want to pass on?

The students seem in general to have found the course to be very interesting and well structured, and also that the support from teachers were helpful and the assignments useful.

The suggestions from the students on how to improve the course include replacing the last (research-oriented) assignment by a more specified data science project, adding seminars/workshops where more detailed examples can be discussed, allowing the use of computers on the written examination, reducing the group sizes and recording the lectures.

The suggestion from the students to future participants include taking a basic machine learning algorithm course first, acquire programming skills before the course, select the final project with care and consult tutorials during the course.

PRIORITY COURSE DEVELOPMENT

What aspects of the course should primarily be developed? How could these aspects be developed in the short or long term?

The last research-oriented assignment should be replaced (at the master level) by a more specified data science project, requiring the students to apply the data science pipeline without having to research the literature and identify a research question. The final assignment should be examined well ahead of the written examination (leaving more time to study for the latter). The course is planned to be given also for PhD students, where the more demanding version of the final assignment will be used instead.

The learning outcomes should be reformulated so that their individual examination will be more obvious. This would include e.g. that the first part of the written exam (covering theory) has to be examined separately from the second (covering programming).

Teaching activities should be planned so that the students can take part of, and discuss in class, more comprehensive examples than what is possible to fit into the lectures.

It should be investigated whether smaller groups (of up to three rather than four students) can be formed for the assignments, as well as if lectures can be recorded, and links to useful tutorials provided in Canvas. It should also be investigated if computers can be allowed on the written examination.

Course data 2019-02-22

ID2214 - Programming for Data Science, HT 2018 Doktorand

Course facts

Course start:	2018 w.44
Course end:	2019 w.3
Credits:	7,5
Examination:	INL1 - Assignment, 4.5, Grading scale: A, B, C, D, E, FX, F TEN1 - Examination, 3.0, Grading scale: A, B, C, D, E, FX, F
Grading scale:	A, B, C, D, E, FX, F

Staff

Examiner:	Henrik Boström <henbos@kth.se>
Course responsible teacher:	Henrik Boström <henbos@kth.se>
Teachers:	Henrik Boström <henbos@kth.se>
Assistants:	

Number of students on the course offering

First-time registered:	0
Total number of registered:	2

Achievements (only first-time registered students)

Pass rate[1] [%]	*There are no course results reported*
Performance rate[2] [%]	*There are no course results reported*
Grade distribution[3] [%, number]	*There are no course results reported*

1 Percentage approved students
2 Percentage achieved credits
3 Distribution of grades among the approved students

ID2214 - Programming for Data Science, HT 2018

Course facts

Course start:	2018 w.44
Course end:	2019 w.3
Credits:	7,5
Examination:	INL1 - Assignment, 4.5, Grading scale: A, B, C, D, E, FX, F TEN1 - Examination, 3.0, Grading scale: A, B, C, D, E, FX, F
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Teachers:	Henrik Boström <henbos@kth.se>
Assistants:	Amirhossein Akhavanrahnama <amiakh@kth.se> Johan Montelius <johanmon@kth.se>

Number of students on the course offering

First-time registered:	0
Total number of registered:	49

Achievements (only first-time registered students)

Pass rate[1] [%]	*There are no course results reported*
Performance rate[2] [%]	*There are no course results reported*
Grade distribution[3] [%, number]	*There are no course results reported*

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