

Teacher's course evaluation

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Date: 27/2 2015
Course name: Vision and Image Processing (ViP)
Course period: Blok 2
Study program: MSc in Computer Science and MSc in It & Cognition

Reflections on student's outcome:

Describe the parts of the course, which in your opinion have contributed to a notably high outcome in relation to the intended learning outcomes of the course.

Describe the parts, which have been notably difficult for the students in achieving the intended learning outcomes.

Please state justifications for your opinions, for instance on the basis of students' exam performance, the assignments they have handed in, their participation in class (dialogue), etc.

This course was given to both MSc students in computer science and It & cognition: Judging from the performance on the assignments and the student evaluation, the course helped both the computer science (CS) students and It & cognition students to understand key aspects of computer vision and the practicalities of this field.

Both groups of students had problems transforming the theoretical description of algorithms to concrete implementations. This is difficult and is therefore no surprise to the teachers.

Reflections on assessment and teaching methods:

What kind of information on the students' learning outcomes does the exam provide?

How does the exam direct students' work on the subject matter? E.g., whether the exam rewards students for working effectively in the discipline or whether an exam which is exclusively oral or exclusively written may direct students' attention away from working with other perspectives on the subject matter?

In which ways do the teaching methods support students' work on the subject matter – where is there room for improvement?

The course consisted of 2 x 2 hour lectures and 2 hour exercise class per week. We increased the amount of exercise class time by 1 hour compared to last year. This format appears to work.

The exam format is continuous pass / fail assessment based on four assignments (1 individual and 3 group). The assignments focus on giving the students practical experience with the studied theory and algorithms. They consist mainly of implementation of selected algorithms and experimentation with these. As such the assignments play a vital role in the learning process.

Reflections on how the course contributes to students' overall disciplinary competence?

From the perspective of the whole study program: How do the course's intended learning outcomes and content contribute to the students' disciplinary development? E.g., disciplinary progression in relation to preceding or following courses, contributions to students' collaborative competence, communication competence, etc.

CS students following the CMM profile gains knowledge in computer vision building on top of the other CMM profile courses.

IT & cognition students gains the first knowledge on how to use computers to analyze images. They also get experience in programming and converting algorithmic descriptions into working programs. Furthermore, the course, to some extent, prepares the students for later courses in the curriculum including the StatML course.

The course is advanced and uses scientific papers as main material thereby training students in reading scientific papers and preparing them for the MSc thesis.

Reflections on student evaluations of the course:

Describe the relation between the students' experience with the course and your experience with the course.

Provide justifications, e.g., that students are particularly satisfied with aspects of the course which you also value, or that your evaluation, with reference to your reflections above, is different from the students', and how your criteria for your evaluation then are different from the students'.

The amount of participants in the official students questionnaire is very low (9 out of 47), which should be taken into account when looking at the results. We also did an oral evaluation at the last lecture.

Comments on the results of the official questionnaire (9 out of 47 participants):

Looking at the results of the student questionnaire it appears that the students mainly appreciate the content of the course. When it comes to judging our feedback – question 6 – it seems that the students are not satisfied. We notice from question 1, that on average the students use far too little time on this course – 6 out of 9 spend less than 20-25 hours. In the free text comments there is one negative comment about the academic level being too high. We do not agree. Also one comment about some of the assignments taking too long to compute: This is unavoidable when working with image data, but sometimes long computation time also reflects poor programming skills of the student.

Comments on the oral evaluation (7 participants):

The students participating in the oral evaluation was in general positive about the course and gave constructive criticism and feedback that we will take in to account in the future. There were comments concerning the assignments – both the text and that it is hard to know when a solution is good enough.

Overall evaluation of the course:

State and justify your own satisfaction with the way the course went, based on the above.

Considering that this course was given for the third time we think the course went well, however there is definitely room for further improvement.

In total 48 students were signed up for the course and 41 students were active (submitting the first assignment). Of these 37 students passed the course.

The level of programming skills among the It & cognition students have improved, but is still a challenge to be handled on this course. Another problem is their lack of basic mathematical skills.

Future development of the course:

State which elements of the course should be developed before the next section of the course – and how.

Outline your proposal of how the course should develop over the long term.

Besides adjustments of the course content, slides and assignments, we will continue our search for a useful textbook. It is difficult to try to teach both groups of the student population in one course and require some careful balancing. We will continue to adjust the teaching to fit the student's diversity. We are considering making the course more applied and cover fewer topics but more in-depth. We should strive to give better feedback on the solutions to assignments. We will also improve the assignment texts.

In our opinion it is necessary to improve the mathematical skills of the It & cognition students before they take the ViP course. We can only cover some mathematical topics but not the basics of linear algebra, both because of limited amount of time but also because the computer scientists already know this material from their bachelor education leading to too much repetition for them. Linear algebra is important both on the ViP and StatML courses. We therefore suggest that it is considered how this material can be introduced as part of the Scientific Programming course on It & cognition. It is better to focus on establishing the basis of programming and mathematics than looking ahead on topics that will be covered in later courses, such as machine learning.