Report - HM1025 - 2021-03-18

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):
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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 process was continuous throughout the course, using:
- discussions with the students and in the project groups during the course
- an individual reflective assignment at the end of the course, focusing on discussing and reflecting on different themes related to the course
- KTH LEQs Course Evaluation Questionnaire at the end of the course, after the grades were given.

The examiner, after consulting the KTH Disability Coordinator (Funka), decided on adapted examination for students with documented special needs, e.g. prolonged exam writing time.

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.)
- Discussions with the students and the project groups continuously during the course, e.g. in connection to the supervision meetings, as well as with students when meeting them. This year this was done in Zoom meetings, due to the pandemic. The discussions took place both in connection to scheduled learning activities, and in extra arranged meetings, where e.g. the unusual circumstances during which the projects had to be carried out due to the pandemic were in focus. In addition, also email conversations were a means for discussions and support.
- In addition, an optional feedback meeting after the course ended was offered to all project groups, which has been a part of the course design since the first year it was given. This year, in contrast to several other years, no student was willing to take on the task of being student representative in the course.

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

The course includes different types of learning activities. These are mainly:
- Lectures that give an overview of the subject with theories, facts and applied examples. These include: physical, system, and cognitive ergonomics, anthropometry, biomechanics, visual ergonomics, personal injury risks, methods in ergonomics studies, limit values and recommendations, ergonomics and economics and the product development process. Also how Ergonomics in product development links to the Design Thinking Framework and the United Nations Sustainable Development Goals are included.

- Three laboratory work sessions where the focus is on learning how to apply a selection of ergonomics methods and gain experience based knowledge on their use.

- A project where the objective is to form and carry out a project to improve ergonomics, develop a prototype and evaluate it with the help of real, professional users. The project includes collaboration as well as independent work and the students exchange peer feedback.

The examination is carried out in three different steps:
- Written exam (TENA; 2 credits)
- Passed project (PROA; 3 credits), oral and written presentation
- Labs, work-shops, seminars, assignments (ÖVNA1; 1.5 credits)

Changes from the last round (presented during the first lecture) were that:
- Due to the pandemic, most of the course activities were carried out via Zoom, with only the three laboratory sessions held at the course's campus
- The written exam was carried out as a home exam instead of at campus. Also this, due to the pandemic.
- One of the Ergonomics Divisions PhD students participated in the course as a new supervisor.

This year the course had 72 % more participants than last year.

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

10 out of the 55 students (17.5%) following the course filled out the LEQ. According to this, in average, the students worked 14.5 hours per week with the course. This corresponds to around 22 hours per 1.5 credits, which is rather low. During the course the students communicated that they felt time pressure. One reason they stated was a demanding project course in parallel with this course. Several of the students suggested that the course and their learning would benefit from having this course running over P1 and P2 during the autumn, not as now, solely P2.

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?

Out of the 55 students who followed the course this year, 52 (95 %) have passed all three examinations (TEN A, PRO A and ÖVN A). These 52 students acquired the following final grades: A - 15 students, B - 22 students, C - 14 students and D - 1 student. 51 of the 53 students who wrote the exam at the end of the course (January 2021) passed it. The grades were the following: A - 3 students, B - 9 students, C - 21 students, D - 10 students, E - 8 students (whereof 2 after a complementary oral examination from Fx) and F - 2 students. The two students who did not pass the exam in January, managed to pass the Easter period exam. Three students still have an individual assignment left and one of them has not written the exam yet. In comparison to previous years, there are no significant differences in the students' results.

STUDENTS´ANSWERS TO OPEN QUESTIONS
What does students say in response to the open questions?

The feedback from the students on open questions in general signal that they liked the course and its design. Many mentioned the applied project with a clear focus on improving real end-users working conditions via product development as one highlights in it, and the teachers engagement and teaching skills as others (e.g. awakening interest for the topic, providing real and pedagogic examples and leading discussions on relevant topics, such as design choices). Also the courses structure, overall clarity and course material were mentioned in positive ways. Regarding possible improvements, several students expressed that, as already mentioned, they would have liked to have longer time for the project, e.g. with the course running over two periods instead of one, e.g. at a "quarter's" pace. Some students suggested even more focus on the project and less on the written exam. Advice to future students includes to be engaged in the course and in the project from day one, get and read the course literature early on, plan for project meetings and make up a clear deliverables plan for the project and plan for "enough" time for the evaluation with professional users.

SUMMARY OF STUDENTS' OPINIONS
Summarize the outcome of the questionnaire, as well as opinions emerging at meetings with students.

The students were generally positive or very positive to the course, and communicated that it is interesting and that they learned a lot. Many of them communicated that they appreciated the course design. Several students especially mentioned that the course design with first learning theory etc. in lectures, then starting to apply part of that knowledge in the labs and then use their experience-based knowledge on in their "sharp", real-life projects was very helpful and contributed to "deeper" learning. Many commented that this design with the project, where they had to develop a "solution" on an ergonomics problem for an occupational group, and evaluate a prototype of the solution with real and professional end-users was something new and really appreciated. They expressed appreciation for the different types of learning activities, also including exchanging peer feedback on the projects. During the course the pandemic situation in Sweden worsened during the autumn 2020, which made it difficult for the students to get access to professional users to test and evaluate their prototypes. In addition, to develop the prototypes as planned in the DaVinci (work)shop was an issue for several of them. The course management allocated time to communicate that due to the changed circumstances and restrictions, the course would adopted so that at all projects still could be carried out. For example, instead of visiting a surgery clinic at a hospital and be there physically when ten surgeons tested and evaluated the groups prototype, they adopted the evaluation to be done with fever surgeons, and with the project team participating via Zoom, using other evaluation methods than planned from the beginning. Several students expressed an ease and appreciation for the clear communication with and from the course management in this time of rather large uncertainty when they had concerns on managing to pass the course.

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.

Short version summary: "Good". Given the difficulties the pandemic presented, my overall impression is that the students were offered a course adopted to the situation and that they reached the learning objectives (although three students have not shown that they documented all of them yet).

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?

From discussions during and at the end of the course from the students generally and from the written feedback from the 10 students who participated in the LEQ no significant differences were seen between students identifying as male or female (all 10 who filled in the LEQ identified as female), as international/national students (only students at a national programme participated) nor among students stating to be with/without disabilities. A longer time for writing the exam was provided for students with function variability, such as dyslexia. All questions in the LEQ were answered with scores in average 6.1 on a seven-grade scale, with the lowest score (5.3) for "I could practice and receive feedback without being graded", which although it is assessed with a positive score (5.3), is somewhat surprising and lower than the average sore (6.1). One possible reason may be that it may be easier to convey to the students that they are not graded practicing and in e.g. supervision meetings when meeting students "in real life" instead of via a digital screen. One take-away from this is to become even clearer on this when using Zoom. However, generally seen, no weak areas are displayed in diagram "Average response to LEQ statements - all respondents" in the LEQ questionnaire report.

PRIORITIZED COURSE DEVELOPMENT
What aspects of the course should be developed primaily? How can these aspects be developed in short and long term?

One re-occurring suggestion from a quite large amount of students this year, and for a growing number of years, is to prolong the course time, so that it runs during P1 and P2.

OTHER INFORMATION
Is there anything else you would like to add?

It is fun to work with this course! One reason is the interesting discussions throughout the course as well as the supervision meetings. Another is the joy to follow the students' development in acquiring skills in the topics which are in focus in the course, including ergonomics, and evaluation with real, professional users and reflecting on ergonomics in product development. Although this year the course was challenging to the students due to the pandemic, and the part with engaging as much with real professional users became smaller in some projects than planned, it is impressive both for the students and the teachers to see what the students achieved and how they developed their knowledge and skills in this area during the course.