Report - MH2000 - 2022-05-17

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.

An LEQ questionnaire has been sent out after the course, the students were offered to fill out this LEQ, but only 3 out of 15 students handed in their answers. In addition, the teachers and assistants have discussed details of the course with the students throughout the course.

Equal treatment of all students regardless of gender or other differences has been the goal in the course.

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.)

The course usually gives plenty of contact between students and teachers/assistants, since there are seven teachers involved in different parts of the lectures.

This year's course lectures and labs are given on-site again after overcoming the CORONA pandemic, which was very much appreciated by students and teachers.

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

According to the course intended learning outcomes (ILO's), this course aims to provide an overview of both common and state-of-the-art experimental methods used in the laboratory in the field of materials science.

The course content includes diverse areas, as (i) scanning electron microscopy (SEM), (ii) x-ray diffraction (XRD), (iii) measurement techniques for thermo-physical properties, (iv) thermodynamic and kinetic measurement techniques, etc. The course emphasizes as well on analyzing of experimental data with respect to quantifying measurement uncertainties.

This is a hands-on course with some time being spent in the lab to become familiar with the different methods (one lab is mainly for XRD/SEM, and one lab for thermo-physical property/kinetic analysis).

Examination:
LABA - Lab Report, 1.0 credit, grade scale: P, F
LABB - Lab Report, 1.0 credit, grade scale: P, F
TENA - Written Examination, 4.0 credits, grade scale: A, B, C, D, E, FX, F

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?

Three students answered this question. The answers vary from 9-11 hours/week, 15-17 hours/week and 18-20 hours/week, as selected by each of the three students. The workload was normal for the first student, where the workload mentioned by the other two students is somewhat to high. It is not clear why the second and third student spent so much time, but it could be due to the various contents the students may have an interest to know the details of each part more specific, so they may have put in more effort to understand the details.

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 grades of the course were provided as follows:
A: 3
B: 7
C: 4
D: 0
E: 0
FX: 0
F: 1

All the students passed the two laboratory parts.
The result is overall OK; it is similar to the distribution of the one in previous years.

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

Q1. What was the best aspect of the course?
- The best part of the course are the labs!
- The laboratory sessions were very interesting and informative. The exam was fair and not too long, which may occur in some courses when having a home-exam. It is also fun to meet many different lecturers from different backgrounds as well as PhD students and seeing/learning about different machines and spending time in the laboratory.
- Getting feedback from lab reports before the exam! Having a digital exam was great for this course!

Q2. What would you suggest to improve?
- The Part A lab workload can be adjusted.
- If possible, implement hands-on experience of the labs, now for some parts it was very theoretical even if it was a "practical" laboratory. The submission from the first part where massive and we did not even get them graded any comments other than a late "pass" on LADOK. It was also very confusing who to send the laboratory report too when the submission was supposed to be sent via personal mail and not through Canvas. The grading of the exam also exceeded the deadline, it might not sound that important but for some students this causes extreme stress. At least I ended up checking LADOK and e-mail over 20 times a day after the 15th work day from the exam and could not concentrate fully on my other courses. I do not understand why so many courses do not respect KTHs own rules when it comes to grading.
- Getting feedback from all lab reports before the exam. Simplify the lab reports for Peter/Valter part because they took many hours and were really difficult.

Q3. What advice would you like to give to future participants?
- Attend the lectures, take notes and ask questions. Also there are many good videos on YouTube that you can watch for some better understanding.

Q4. Is there anything else you would like to add?
- I understand the purpose with randomizing groups but sometimes it creates a lot of unnecessary work, especially when some students that you are placed with do not do their parts. This can simply be avoided by letting the students choose their own groups. It could also perhaps be a possibility to remove the exam for this course and only have laboratory reports combined with personal submissions that are in the same "level" as the exam questions.

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

According to the students' answers to each of the questions, students show a positive opinion about the course. For instance, all of the students which answered (+3 score) state that 'the assessment on the course was fair and honest'; all the students provide +3 score of 'I was able to learn by collaborating and discussing with others'; all the students provide a +2 score of 'I worked with the' interesting issues'.

Some of the few students seem to be unsatisfied with partial course organization, since one student leave the open comment saying 'During the labs we could get help but if we got stuck afterward when writing the report, it was more difficult to get help. For Björn's part we received feedback rather fast leading to a better understanding of the subject, and it was really good to get the feedback before the exam! But for Peter /Valter's reports, we did not get any feedback leading to less understanding of the subject'. Besides, one student commented on the course content is too diverse so he/she is hard to learn deeply in a short time.

The abovementioned points need to be improved in the next year course, especially for the organization issue.

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.

Overall, the students seem to be satisfied with this course. According to some teachers and all assistant's opinions, the students have a good overview on the different experimental methods during the labs which are after the lectures are given. This direct knowledge could help the students to perform individual research in either academia or industry. Some parts of the course organization need to be improved, e.g. the late response to students' emails and questions need to be solved.

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?

Too few answers to be able to evaluate.

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

The primary aim of this course is to let the students know the brief working principle and main application of each experimental method, both traditional and state-of-the-art methods are have to be included.
In the short term, how to make a balance of theoretical and practical part of each methods included in the current course is worth to be optimized, the students need to have a good understanding in both the application field but also in the theoretical levels.

In the long term, including the state-of-the-art characterization, e.g. nanostructure characterization using atom probe tomography (APT), large scale facility (LSF), etc. could be considered to be added. But also the course structure needs to be designed in a condense way, since currently the course is already very comprehensive. These issues should be discussed between the involved teachers.