

Report - MH2054 - 2024-11-26

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):

Pär Jönsson, parj@kth.se

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.

At the end of the thermodynamics recitations in the course, all students were asked to give their feedback. 22 students out of 46 replied. At the end of the course an LEQ was offered to all students. 8 students out of 46 answered.

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.)

At the beginning of the course the teacher asked if one student could be the course representative from the students, but no one wanted to do this. Instead, the teachers have been active in answering questions on e-mail, canvas and in the class room to get feedback on the course. At the end of the thermodynamics recitations in the course the teachers asked the students to give their feedback on this particular part.

COURSE DESIGN

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

Goals

The course provides knowledge of:

- how a sustainable production of metal in a modern industry is part of the circular economy in a society
- the production of metals based on both ore and recirculated metal exemplified with the production of steel, copper and aluminium as well as the production of metal powders
- how simplified thermodynamic calculations relevant for the production of metals can be carried out
- the integrated parts of an industrial process for metal production based on a visit to a metallurgical plant

After passing the course, the student should be able to fulfill the following learning goals:

- ILG1: Explain current methods to produce base metals from natural ores and recycled materials, which are most relevant for the Swedish metals industry as well as explain how a sustainable metal production is part of a circular economy
- ILG2: Explain and apply basic kinetic and thermodynamic theories to evaluate metal production processes
- ILG3: Explain the integrated parts of an industrial process for metal production

Course requirements:

- LAB1 - Circular economy, home assignment and seminar, 1,0 hp, grading: P, F
- ISTU1 - Study visit, 0,5 hp, grading: P, F
- IPRO2 - Thermodynamics - home assignment and seminar, 2,0 p, grading: A, B, C, D, E, Fx, F
- IPRO3 - Kinetics- home assignment and seminar, 2,0 p, grading: A, B, C, D, E, Fx, F
- IPRO4 - Basic principles of production of iron, steel, copper, aluminium and metal powders - written exam, 2,0 p, grading: A, B, C, D, E, Fx, F

One particular thing that was changed is that the design and examination of LAB1 was modified. The assignment was set up to give students freedom to suggest their own ideas on how to use electrification to promote sustainability and a circular economy in any metal producing process. The students were asked to make posters to explain their ideas. the exam took place at Alleima in Hallstahammar where 20 people from the company and 4 KTH teachers examined the results.

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?

Only 8 people answered so it is hard to draw clear conclusions.

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?

Grade Number of results

A 15

B 5

C 13

D 8

E 3

Fx 0

F 0

Incomplete 2

Total students 46

Overall, the students have done very well in the course. It is the second time the course is given and the results are better than last years results. One difference is that this year the 1st year masters students participate. They are in general more interested in the subject since they have selected the masters program. The Bachelor students have not selected a master yet so not all are interested in the subject.

STUDENTS' ANSWERS TO OPEN QUESTIONS

What does students say in response to the open questions?

Teachers speak English well. That's helpful to me to understand.

Nice course and professors. Easy to understand what professors say, no problem with the communication.

A prestigious school with outstanding teaching quality, it is my honor to be a student of engineering materials science.

What was the best aspect of the course?

The combination of the industry(field trip and the knowledge from the real world) and the teaching. However, It is also a part that I would like to

suggest that field trip can be more meaningful by bringing question and a simple task that requires student to summarize the outcome of the field trip, leading the student to think about what they have learnt and what they can do with their knowledge, in result to deepening the knowledge and excavating the interest in their future career

The study visits were really insightful and interesting. Several people commented on this.

It was interesting. There were many assignments, so the grade was well distributed throughout the content. Most of the teachers were really helpful, knowledgeable, and passionate about the topic they were teaching.

Par and Sudanshu had amazing capability to grasp anyone's interest and attention during lectures.

What would you suggest to improve?

In the thermodynamics exercises, the TA should be more confident in her abilities and I think it would be more fruitful if during the exercise the students were able to solve the exercise on their own and after a short time discuss it all in groups or with the whole class. This way would be better to better understand and assimilate the contents. Several people commented on this.

What advice would you like to give to future participants?

Learn to draw a flow chart with the important steps and vital index, and use the field trip to practice the knowledge

Do the assignments on time, don't let it accumulate, especially in conjunction with other courses. Also don't skip on the lectures, they are really informative and helpful.

Do not miss field trips and lectures.

Attend every lecture and study hard

SUMMARY OF STUDENTS' OPINIONS

Summarize the outcome of the questionnaire, as well as opinions emerging at meetings with students.

Overall the students seems to be very happy with most part of the course. It is clear that they really think that the industrial visits increases their learning experience of the process part of the course.

They wish that the thermodynamic part of the course could be improved slightly to increase the understanding.

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.

A well balanced course which includes both traditional lectures, lectures in connection to industrial visits as well as possibilities to get exposed to industrial operations to enhance the knowledge about processes. The examinations are also done in a mixed manner including self-correcting exams on canvas, one written traditional exam, a poster session at an industrial site.

It was a success to examine LAB 1 as a poster session in connection to an industrial visit.

PRIORITIZED COURSE DEVELOPMENT

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

Improve the thermodynamic recitations slightly to enhance the overall understanding.
