Report - MH2039 - 2019-01-22

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):

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COURSE DESIGN

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

Goals

Having finishing the course the student will be able to:
• Briefly describe the structure of main routes for material production and treatment processes from raw material to final production;
• Briefly describe the main processes of material production in liquid and solid states at high temperature, analyse and compare advantages and disadvantages of main production processes;
• Understand and apply heat and mass balances in metallurgical processes;
• Carry out an advanced literature survey in KTH databases to obtain relevant information for specific projects;
• Apply individual skills as well as team skills in preparation of project report and presentation.

Content:
Basic knowledge of mass and energy balances for analysis and optimization of metallurgical processes in following courses at KTH. Knowledge of how the whole metallurgical production route from raw materials, metallurgical processing, casting and material processing is related to desired material properties for metals and alloys.

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Examiner: Prof. Pär Jönsson, parj@kth.se

Course requirements:
- Group report and presentation (TEN1) - 4 hp, grade scale: A, B, C, D, E, FX, F.
- Home assignment (ÖVN1) - 2 hp, calculations and written report, grade scale: P, F.

Changes made:
Home exam (during 24 hours) was changed to Home assignment (1 week) because calculations of mass and heat balances need more time. Group report and group presentation were evaluated separately.

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?

Most students spent 12-14 hours per week, but it ranged from 5 to 17 hours per week. Some students have stronger knowledge to start with and do not need the same time.

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?

Most students graduated successfully this course.
The following results were obtained:
A grade - 5 students, B grade - 3 students, C grade - 7 students, D grade - 8 students, E grade - 5 students, F grade - 1 student (because he does not performed the Home assignment and Group project, which are required in this course).

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?

Some significant differences in metallurgical knowledge level between different groups of students were observed. It may be explained by different initial specialization of some students.
There was no significant difference what so ever between the male/female/etc. participation in the course.

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?

Best parts:
Presentation part.
Being able to choose a subject for the project and learn about something that you find interesting.
That learning about mass and heat balances is a very important part of metallurgy to apprehend.
Group work.
Student could calculate on the lecture and check if the answer is right. That makes me clearly know if I understand the knowledge.
The heat and mass balance are my best
The Group project and the project presentation were the best aspects of the course. The home assignment also helped me in a big way to develop my abilities.
The final result is evaluated by both home assignment and presentation which gives flexibility in preparation.
The design of the course work.
The practical exercise, which helped to better grasp and understand the concerning concepts.

Bad parts:
More general knowledge about the used equation
The usage of the knowledge obtained, for example how to calculate mass and heat balances. The exercises did not feel very meaningful since the only time in the course where you actually had to use this knowledge was for the home assignment (provided that you chose Project 1, which most of the class did). A suggestion would be to, for example, have a partial exam including calculation problems where one actually gets to test one's knowledge and understanding. In my opinion, this would make the learning feel more meaningful.
That the project part should be deadlined earlier in the course (about two weeks earlier), then you would work more continuously throughout the course. Secondly, it would be better if we had one or two lectures about creating a good presentation and a clearer structure of what is to be included in the project and presentation. My group misunderstood the project description, so that should be improved for the next year participants.
I support the idea to give students some home assignments instead of doing exams because in the home assignment, students are trying to solve and calculate the problems many times it leads them the course be more understandable.
The course is best the way it is and I have no suggestions.
More challenging calculations on heat and mass balance can be given in the class.
If possible, some comparisons with other metals production processes.

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?

Some students' answers to the open questions:
Compared to the courses attended in the bachelor degree (in another country), I found this one really practical and useful for the future. I think one day I will definitely make use of these concepts, both in other exams and in a future job. The teachers speaking speed is appropriate for me to understand.
I had a chance to learn to perform mass balance and energy balance in the simplest way.
The course allowed me to independently work on the problems in mass and energy balance and it provided an opportunity for self-development.
I was able to practice every type of problems during the lecture and also at home independently and as a group.
The assessment was fair and honest.
The group creation for the final project presentation helped us in this aspect. I interacted within the group and outside the group to understand the concepts taught through the course.
I headed my group and I was able to convey my steel technology knowledge gathered from my previous work experience, to my group members and my colleagues.

General advice to future students:
Start with the project on time and try to work with the exercises at home.
Start with the project early in the course.
I advise them to select this course because it's useful and easy.
The group project work preparation consumes a large portion of the available time and it is best to start it from the day one of the course. If ignored, one may have to spend a lot of time particularly for it, during the exam period.
For students interested in ferrous metallurgy, this class would something you should not miss.
Try to apply the best presentation skills for the final presentation.
To start exercising as soon as the course start in order to actively attend lectures and be able to solve exercises and better understand them.

PRIORITY COURSE DEVELOPMENT

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

Suggestions to change of course:
More general knowledge about the used equation.
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