

Summary of feedback CHEM-E1130 Catalysis (2018-01-08 - 2018-04-05)

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Introduction

In academic year 2017-2018, I (Riikka Puurunen) for the first time fully organized the [CHEM-E1130](#) Catalysis course at Aalto University. My general pedagogical goal is to develop the course, and the wish was to collect plenty of student feedback during and after the course.

Feedback was collected in three ways:

1. Anonymously with preemo after each lecture.
2. With MyCourses Quizzes related to each lecture, with the “I like” and “I wish” questions.
3. With the automatic anonymous Aalto feedback survey, with manually added questions.

This document summarizes the written feedback for the manually added questions in a form that can be openly shared. Clearly identifiable personal information has been removed, when it was related to other persons than the responsible teacher, in places marked with <..>.

I thank the students for the feedback, which will significantly help to develop the course further in the next academic year.

Feedback in nutshell

Identified timing overlaps

- Overlap with the Biomass Pretreatment and fractionation -in laboratory course laboratory works and also with the thermochemical processes -course on several weeks.
 - Communicated to study planning office 26.4.2018

Feedback point per point, items lifted by the responsible teacher

- Overall:
 - “This course was one of the most interesting and well organised I had in Aalto University.”
 - Teaching method was impressive ,I liked the video recording of the lectures and I suggest that to add more industrial examples in the course.
- Feedback on the lectures (in Riikka’s words)
 - Some liked a certain lecture, some especially that one not.
 - The Julian Ross “course book” (which actually did not cover all our topics) divided opinions: some appreciated, some disliked it
 - The order of lectures could perhaps be better
 - More industrial applications and examples wished. Examples from oil industry wished.
 - Lecture materials can be improved
- Calculation exercise:
 - Overall feedback was positive → it is clearly good to have this included.
 - Some wished to have even calculation exercises; some wished to understand better what they have calculated.
 - Grading and assistance needs to be developed.
- Group work:
 - Overall positive feedback → include next year, too.
 - Video outcome instead of powerpoint presentation was liked.
 - Extend video time from 3 min (to maybe 4 min?).
 - Suggestion to fix the groups and subjects by the teachers (now the students could suggest topics and choose their groups).
 - Hints wished of free-to-use software, to help make the video outcome
 - Group work instructions could be better
 - (Group peer evaluation instructions & returning them should be organized better)
- MyCourses Quizzes
 - A learning tool overall appreciated by the students.

- Quizzes could still be used better to improve learning. The questions could be developed still and technical problems solved - for some some quizzes, the model answers could not be seen (and we organizers don't know why this is)
- Quizzes: make "I like, I wish" not compulsory
- Panopto lecture capture:
 - Students appreciate them. Feedback is overall only positive from students who use them (not all use them, of course)
 - Additionally we received good suggestions for further improvement (how to include laser pointer in the video? How to have better sound quality, when lecturers walk around?)
- Presemo activation (there were three in the lectures by Riikka - in the beginning, after break, and feedback at end):
 - Overall appreciated by the students
 - "good use of these, not too little but not too much".
- Evaluation:
 - calculation exercise evaluation was found tight, otherwise fair,
 - "I think the system is fair, and rewarding those who do work during the course."
 - (Evaluation was not finished when the students answered the query)
- Question "I like": A lot of positive things mentioned, some picks:
 - Several days to make the quiz → helps in scheduling studying
 - Teacher's motivated attitude to developing the course
 - "I liked the quizzes and especially presemos overall and Riikka's way to teach, got me interested in the catalysis."
- Question "I wish": Many good suggestions, thank you
 - "After fixing those little things mentioned above, this course will be super good."
 - Suggestion: visit to an industrial catalysis-related site.

Copy-pasted feedback from Webropol survey

9. General comments and suggestions (on such matters as course material, teaching methods, course arrangements, ways of completing the course/examinations and unnecessary overlaps with other course contents, or other matters).

Number of respondents: 21

- None
- Mostly good arrangement of course material
- The quizzes after each lecture are a good way to reflect on the lecture and grasp its main ideas.
- Kurssilla käytettyjä Quizzeja olisi voinut käyttää vielä tehokkaammin olennaisten asioiden läpikäymiseksi.
- Quizzien tuloksien avulla seuraavalla luennolla oli hyvä käydä läpi ja kerrata tärkeimpiä asioita edelliseltä luennolta. Tähän olisi voinut mielestäni käyttää vielä enemmänkin aikaa luentojen alussa.
- The quizzes were really good and they motivated to recap the subjects discussed on the lectures.
- The course overlapped with the Biomass Pretreatment and fractionation -in laboratory course laboratory works and also with the thermochemical processes -course on several weeks. This could be looked into.
- Perhaps the order of the lecture topics could be reconsidered to support the understanding of phenomena at the beginning of the course and then diving into the applications and characterization methods.
- The course book by Julian Ross was in my opinion bad. It doesn't have a clear structure to support the understanding of theory and focuses rather on solving equations in a rather messy way.
- good course
- Group work was very confusing
- The group presentation should be extended from 3 minutes to longer period. The overlapping was "minimized" due to the lecture recordings, which was great! The exercises were good. However, although everything was mainly good, the course somehow left the feeling of overdoing by the organizers. For example, the following feedback boxes, I feel they are unnecessary. During the lectures, it felt, that there were too many positive attempts. When one thing does not work, the whole impression collapses. However, the whole course was organised really well. Perhaps too well.
- course materials are quite nice, i really like it.
- Teaching method was impressive ,I liked the video recording of the lectures and I suggest that to add more industrial examples in the course.

- Teaching methods were excellent.
- I'm pleased with every subject listed on the brackets.
- Perhaps the notes can be less cluttered
- Keep it up i lovd this module
- I think it was great that lecturer was really committed to the course and collected continuous feedback! Although maybe it's not necessary to spend time on every lecture to go through feedback and general issues. But otherwise very well arranged course!
- In the last lecture it was said that photocatalysis and electrocatalysis are extra and then there was a question about those in the exam. What is briefly but accurate enough but yet no deep details needed?
- Nothing too much.
- As said previously, try to tie the lecture together more and provide links to big picture
- This course was one of the most interesting and well organised I had in Aalto Univerity.

10. Feedback related to the lectures

Number of respondents: 20

- Good
- The fact that they were recorded on Panopto is great. And the varied lecturers keep it interesting and allow us to see different approaches to the subject.
- Osa luennoista ei olleet aivan viimeistelyjä esityksen ja materiaalin osalta.
- They were mostly good, although some of the quest lectures were a bit hard to follow. The Panopto-recordings were a really good idea!
- Lectures were generally good, structure and goals were clear, but some of the visiting lecturers were persons of great expertise, but some of them were not the most pedagogically talented.
- Unfortunataly I didnt have the possibility to participate to the lectures. Therefore, the recordings of the lectures were great!
- The lecture delivery should be more interesting
- You were good to understand and the slides are also good
- Good.
- I suggest that to add more industrial examples in the course.
- More industrial applications and examples, and maybe more calculation exercises about catalysis. I have noticed that the best way to remember things is to make calculations.
- More catalytic reactions and maybe some examples from oil industry how catalysts fasten reactions.
- I generally liked the lectures. I've given feedback on the individual lectures. Some of the lecture material could've been more carefully prepared.
- Lecture on TP characterization was the most systematic and logically flowing lecture
- <identifiable comment removed>
- <identifiable comment removed>
- <identifiable comment removed>

- Lectures were clear and compact.
- Good lectures, nice to have different speakers
- good, not too heavy
- Two lectures per week sounds like a good rythme.

11. Feedback related to the individual exercise on adsorption characterization

Number of respondents: 22

- Good
- Exercise instructions could have been a little clearer, but otherwise a good preliminary of the exam
- The exercise was interesting and the level fair. However the instructions were not always cery clear regarding due dates and submissions.
- Minusta tämä tehtävä oli opettavainen ja erittäin hauska.
- The instructions were quite unclear, and it seemed impossible to achieve full points for the task due to this.
- This exercise was kind of unnecessary, because it felt really be apart with the rest of the course. This should be tied more to the actual contents, or instructed somewhat differently.
- I have given separate feedback regarding the exercise. BR, <name removed>
- Too difficult
- Great! Next time more exercises like that!
- Good.
- individual exercise is easy to finish but difficult to understand.
- It was informative I learned a lot through it and there should be more exercises like this.
- Quite difficult, could include some hints, or preparative exercise.
- The exercise was very teaching overall. However, the information given for the exercise wasn't sufficient, for it took many times to correct the exercise. <identifiable comment removed>
- Very good exercise to allow us to understand what we learnt
- Exercise 2nd grading is not up.
- I think this was the biggest flaw in this course. <identifiable comment removed>
- It was a good exercise, but I was disappointed how the evaluation went and the grading. If there was only a minor mistake in the first submission and someone else had many mistakes, after the second submission the points were pretty much the same. I think it was too much to minus 3 points straight if there was only slight mistakes in the first submission.
- Pretty straightforward calculations. However very strict evalution. I had just chose one wrong isotherm type. Otherwise I had all the calculations correct but still I got only 7/10 points.

- More clear instructions on what was wrong and what was right could have been on point.
- good start, make more exercises in the future!
- The exercise was challenging and made me understand more of the lecture content.
<identifiable comment removed> Indeed, I wasn't able to understand my mistakes.

12. Feedback related to the group works

Number of respondents: 22

Good

- Group work instructions were not so clear, hence there was a wide variety of work produced - perhaps some guidelines would have made it better to follow
- The video format is a welcomed change, and forces us to have a different approach to the work, more concise.
- Mielenkiintoinen ja uusi lähestymistapa ryhmätötoiteutukselle.
- The video as a product was a fun and different idea, as a whole I think the group works were good.
- Group works were mostly fine, as you may know, the time limit was too short, so a lot of good information went unheard. Literature part was also nice, and the compiled document.
- It was great that I had the flexibility to prepare a presentation instead of the group work. Thank you for that!
- -
- Confusing
- Good, but time was too short.
- it could be better if we could give more time to present it. 3-minutes is too short.
- It was a good activity learnt a lot i.e. team work, how to write a report etc
- Group works were quite good, not very broad which was good.
- I enjoyed our group work very much. Our group dynamics worked out well and our topic was interesting. The length of the video was sufficient.
- Good idea to do video. Allow us to learn from other peers and industries in a concise manner
- I think it was good. But it really took a lot of time
- Group work was nice, the video concept was a refreshing exception to traditional PP-presentations!
- I wish there would not be a groupwork in all of the courses... it is always the way that you concentrate only in your part and your small group topic and then that is it. I have to admit that I don't remember even the topics of other groups anymore.
- Group works were okay and they didn't consume too much time from the teaching.
- Typical presentation could do it better than 3 minutes video, but it was fun and a different way.
- pretty good i guess
- I think it is a good thing to have a group work counted in the evaluation.

13. Feedback related to the MyCourses Quizzes

Number of respondents: 22

- Good
- Good summaries to the lectures
- Good idea.
- Kokonaisuudessaan hyvät Quizit. Ehkä kysymyksiä voisi olla vähemmän ja kysymykset laajempia, jolloin Quizzeista muodostuista hyvä yhteenveto luennosta. Quizzien asiat voisi käydä sitten vielä läpi seuraavan luennon alussa uudelleen.
- They were really good and supported learning, although sometimes the answers were really hard to find.
- Quizzes were really good, some of the materials from the visiting lecturers had somewhat more difficult questions than the others, but other than that, nothing bad to say.
- The quizzes are a great tool to ensure that students learn during the course and after some of the technical challenges at the beginning of the course I think they worked out fine.
- Good way of learning
- The questions concernign the Ross book were annoying and sometimes the questions were not very well formulated
- Good.
- the quizzes are not that difficult, i am happy with that.
- I liked it the most because it helped to study step by step and be with the class.
- Excellent.
- The quizzes were pretty easy, and thus very nice. Maybe they could've couple of more difficult/applied questions in the future.
- Some lectures quiz results not out and some quizzes cannot be review for revision
- Quizes were fun and it aided in the learning
- They were a good concept, although some questions were almost childishly easy.
- I loved them! Very efficient way to keep students on track the whole course.
- Quizzes were good way to focus on the material after the lecture.
- They were good but sometimes a little bit too easy
- good repetition, maybe only once a week in the future, even if there are multiple lectures during the week
- The MyCourses Quizzes allowed to further understand what are the implications of each lecture.

14. Feedback related to Panopto recordings

Number of respondents: 21

- Good
- These were good!
- Great, shame that some of the lecturers did not record their sessions.
- Ehdottomasti hyvät oli nämä.
- A good idea and helps to study even if you can't be present at the lectures.
- Generally, really good. I enjoyed them. If something wasn't clear from the lecture notes, then you could just jump back to the lecture and listen it over again.
- Sometimes it was a bit difficult to hear the lecturer as some of them tended to wander around the room. Also sometimes the slides were not shown on full screen and if the lecturer used the pointer, this was not visible in the recording (using the computer mouse would probably solve this). But overall very good to have recordings.
- good
- never watched one...
- GREAT! AWESOME! WELL DONE!
- i like it, , it is quite useful.
- It helped in understanding the lecture even if someone missed the lecture
- Did not ever looked at those, because I was usually present.
- I haven't watched any recordings yet, for I've participated almost every lecture.
- No comment, never used it
- Some were missing but still it was good. I felt like the camera could video the laser pointer on the screen
- It is a very good option to be able to go through the lectures at your own time in your own peace afterwards.
- Some students need more repetition than others.
- It is good to have videos of lectures if you are not able to participate.
- Didnt watch any, was on all of the lectures.
- works alright?
- Panopto recordings were usefull to get supplementary info that I missed during the lecture.

15. Feedback related to Presemo feedback

Number of respondents: 20

- Perfect
- Could have had more presemo used especially in the second half of the course
- Easy to use, allows for a quick overview of the students' feelings about the lecture.
- Mukavasti hereillä pitävä taukosormijumppahetki
- It was ok, could have been used more, but only if it had a real meaning towards the lecture.
- This was fun, but other than that, I didn't get personally attached to it. Hopefully my answers were of help.
- I liked it

- Ok.
- I think it will help to improve the course.
- Maybe too often. Once during lecture is enough.
- This is a good method and should be continued.
- No comment, never used it
- It was awesome
- I liked them! And it is good not to include those questions in the course slides in MyCourses, it makes it essential to attend lectures.
- Good way to give feedback right after the lecture.
- Fun idea, could have been utilized even more.
- good use of these, not too little but not too much
- I liked the Presemo feedback, it created rythme in the lectures.

16. Feedback related to evaluation (so far). For example, were the points given for the various parts fair?

Number of respondents: 21

- Yes
- Good and fair.
- Tuntui aika perinteiseltä tavalta... ei mitään negatiivista sanottavaa.
- The grading on the adsorption excercise was a bit tight, but otherwise I think the grading has been good and equal between the different things.
- I think the system is fair, and rewarding those who do work during the course. I like it. Maybe the group work evaluation should differ a bit more.
- I think the evaluation was fair.
- The points given to the video production and the quizzes should be higher.
- For the quizzes and the exercise the points were given fair. For the group works the results are still missing.
- Yes.
- yeah, i think so.
- Teaching method was impressive ,I liked the video recording of the lectures and I suggest that to add more industrial examples in the course.
- Yes, it has been.
- I think the evaluation is balanced nicely.
- Very fair
- It is fair
- Exam was really fair! No questions about small details but instead broad questions that tested the actual understanding of important topics. Just like exams ought to be!
- So far, I have seen only most evaluations in the quizzes and the ones that were given, seemed fair.

- Big minus was that there were/are still missing some of the quiz evaluations. It would have been essential to have them by the exam.
- see section 11.
- Evaluation was good
- yeah probably
- The distribution, of the points given to the various parts seemed fair to me.

17. Other feedback - I like

Number of respondents: 20

- How the teacher is trying to give us the best
- I like that all the feedback given in the MyCourses quizzes was always taken into account by the teacher.
- Mielenkiintoinen ja opettavainen kurssikokonaisuus. Loistava Julian Rossin lisämateriaali.
- I like Riikka's motivated attitude towards changing the courses to be more suitable for learning.
- I liked the course overall, lets see how the examination is. The structure and goals were clear from the start and helped me to learn the wanted things.
- I like the courses where there is interaction between the professor and students. Perhaps more discussions could be still included to the course.
- -
- The way the lecture was organized
- Almost everything!
- i like the course materials and Panopto recordings
- I like the way of teaching compared to other courses
- .
- Not to add.
- This course has been the best of major courses yet!
- Very broad scope of catalyst industry
- The module. I learnt alot about catalyst from this
- I liked the quizzes and epecially presemos overall and Riikka's way to teach, got me interested in the catalysis.
- This was a good course about catalysis.
- Overall good course, most of topics were really interesting.
- -
- I liked that all materials were online. I liked that we had a week to do the quizzes. It allowed to make a reminder and helped to strucure the personnal learning.

18. Other feedback - I wish

Number of respondents: 18

- None
- I wish we could have access to the previous years' exams so we could prepare better.
- Videoiden tekemistä varten olisi hyvä löytää heti toimiva ja ilmainen videoeditointiohjelmisto. Ryhmätyöinfoon yksi tällainen kalvo linkkeineen suositeltuihin ohjelmistoihin auttaisi alkuun mukavasti.
- I wish that the course was a bit more uniform. The contents are logical, but the field is so broad, that we can only get a small scrape on surface of everything.
- See previous comment
- I wish the exam allowed material to be brought in
- more exercises with calculations/self study and less quizzes
- Other feedback. Perhaps too much good!
- I wish the quizzes could be improved a little bit, for example, i like- i wish--, these two questions. I will be happy if these two questions are not compulsory, sometimes i think i don't know what to say...
- I wish there would be one or two industrial visit.
- After all, course was one of the best courses and it was nice to notice that lecturer has such nice attitude to develop the course which is usually lacking from another lecturers.
- I wish there were midterms to continually reinforce our understanding
- I wish you a good year ahead! I wish there are more questions because i took so much effort to memorise everything
- I wish there would be more courses taught like this with presemos, quizzes, other exercises. Many other courses are only in the traditional way of listening quietly to the lectures + exam (+ groupwork)...
- Nothing comes to mind.
- After fixing those little things mentioned above, this course will be super good.
- -
- Maybe groups and subjects for the group report might be fixed and not chosen by th students.