Kursanalys

Kursens namn och kurskod: KF2180 Biopolymers	När kursen genomfördes : VT2021
Kursansvarig: Francisco Vilaplana	Övriga lärare i kursen: Teachers: Thomas Crouzier, Karin Odelius, Mikael Hedenqvist Laboratory assistants: Reskandi C. Rudjito, Emilia Heinonen, Secil Yilmaz Turan, Ulrike Schimpf, Antonio Capezza, Susanna Källbom Research seminar: My Hedhammar, Anna Hanner, Bruno Frka-Petesic (U. Cambridge) Panelists: Sigbritt Karlsson (KTH), Emma Strömberg (IVL), Kristin Geidenmark Olofsson (Trioplast), Lena Lundberg (IKEM) Career development seminar: Rosana Moriana (RISE), Åsa Ek (Stora Enso), Lin Carlsson (Cytiva)
Antal registrerade studenter: 26	Examinationsgrad efter 1a examenstillfället: 96%

Redogör för hur studenternas synpunkter på kursen har inhämtats (kursenkät, kursnämnd, annat), samt huvudsakliga synpunkter från studenterna:

I have obtained feedback from the students after the student survey, and also in a meeting with the student representatives (Saga Grånäs and Philip Josephson) in the middle of the course.

The survey was conducted by a total of 12 students, which constitutes a response frequency of 44.%. The amount of work devoted to the course by the students was quite broad, between 9 to 26 hrs/week, which is in accordance with the ambition level placed by the students on the home assignments. The average results from the LEQ statements were very encouraging with most of the responses around 6, which evidences excellent feedback on the meaningfulness and comprehensibility of the course. As standout, I would like to highlight that the students felt strongly that the atmosphere on the course was open and inclusive (graded 6.4 out of 7), which was very relevant for me in the current Covid pandemic. Indeed, at the beginning of the course, the students and I agreed upon a code of conduct during the in-class activities and online sessions, where the students were encouraged to be active in the in-class discussions and have the cameras on. On the other hand, the students reflected that it was more challenging to feel togetherness with others on the course (graded as 5 out of 7), which can be attributed to the Covid challenges.

From the comments of the survey, the students appreciated deeply the flexibility and freedom of the flipped classroom methodology, as the lectures could be viewed at their own ease and with sufficient time before the in-class discussions. The students seemed to really enjoy the in-class discussions, where they had the chance to develop the contents of the videos, ask questions, get feedback on the modules and prepare for the home assignments. The students also appreciated the possibility to pass the course with the home assignments, as this encouraged the students to distribute the work load throughout the course, and recommended future students to pay special attention to them.

The project assignments were very well received, as they gave the students the opportunity to work with expert researchers with research questions relevant for the 'real' world. Finally, the three seminars were very appreciated, as they seem to offer another perspective on the content of the course, expanded the point of view and the impact of the course, and served as inspirational perspectives.

Beskriv hur kursen har utvecklats från förra kurstillfället:

This year the course was completely reorganized to account for the Virtual mode caused by the pandemic. All the presential classroom lectures were cancelled and substituted by a flipped classroom methodology with pre-recorded lectures and in-class activities via Zoom. The course was reorganized in 5 Modules with the main theoretical content (Module 1: Polymers and the environment; Module 2: Protein materials; Module 3: Polysaccharide materials; Module 4: Bio-based polymers and processing; Module 5: Biological degradation and end of life). For each Module, a pre-recorded lecture was prepared and uploaded in Canvas, so the students could access it at their convenience during the course. An available time for the pre-recorded lecture was also scheduled in the course scheme. In addition, an in-class session over Zoom was scheduled for each module, where the students worked in groups with prepared activities and could ask questions about the contents of the pre-recorded lectures. Only Module 4 consisted in 2 lectures via Zoom.

After each Module, a home assignment was uploaded in Canvas, where the students had the answer to 5 questions/module (this was the same as last year).

The laboratory project assignment was reorganized as well due to the laboratory restrictions. Instead of performing a full laboratory project where they generated the data experimentally in the lab, the students were given experimental results and attended instead laboratory demonstrations by the project supervisors in the lab.

Finally 3 tutorials/seminars were arranged instead of the study visit: (1) an Online seminar (Research front within biobased materials and biopolymers) with research experts from KTH and University of Cambridge, (2) an Online panel (Opportunities for polymers in a sustainable society) with representatives involved in the industry and regulation of plastic materials and (3) an Online seminar (Career alternatives in biobased polymers) with representants of companies working with Biopolymers (Cytiva, Stora Enso and RISE).

The evaluation was performed using the outcomes of the home assignments and by an oral exam. To the oral exam, 8 students were registered and it took place over Zoom.

Synpunkter från övriga lärare:

The possibility to change the previous lectures to modules with flipped classroom (online videos and Zoom activities) was well supported by Thomas Crouzier.

Förslag på förändringar till nästa omgång:

I will keep probably the structure of flipped classroom for the next edition of the course, as it was very well received by the students. Hopefully the in-class discussions will happen in the classroom (instead of Zoom), so this will improve the feeling of 'togetherness' of the students in the course.

One suggestion I received was to spread a bit more in time the content of the 5 modules, as they were too consecutive in the beginning of the course. I could alternate the seminars with the Modules so there is time to breathe between the modules.

For the home assignments, we should emphasize in the beginning of the course the importance of taking them seriously and perform additional research building up the knowledge of the course to be able to pass them.

Har denna kurs lärandemål inom området miljö och hållbar utveckling (JA/NEJ)? YES

I sådana fall, hur examineras dessa?

The course is deeply relevant for the sustainability of plastic materials. The learning objectives within environmental and sustainable development are therefore examined in the home assignments, the oral exam and the project assignment.

Övrigt:

It was a very rewarding course to give this year in the context of the pandemic, and it seems that the changes with the flipped classroom paid off.

Kursanalysen ska göras inom en månad efter avslutad kurs. Den färdiga kursanalysen skickas till kansli-chebio@che.kth.se. Bifoga sammanställning av kursenkäter och eventuellt mötesanteckningar från kursnämndsmöten etc.