



Programrapport

Programmets namn: Resource Recovery- Biotechnology and Bioeconomy Resource Recovery- Sustainable Energy Processes Resource Recovery- Polymer Materials for a Circular Economy	Ladokkod: TAREB TAREE TAREP
Antal högskolepoäng: 120	Årskull 2022
Programansvarig: Akram Zamani	

Enligt Riktlinjer för löpande utvärdering av kurser och utbildningsprogram vid Högskolan i Borås (Dnr 589-17) ska programrapporten utgå ifrån följande aspekter:

- 1) Studenternas möjlighet till ansvar och delaktighet
- 2) Sambanden mellan programmets kurser samt mellan examensmål, lärandemål undervisningsformer och examinationer
- 3) Forskningsanknytning i programmet
- 4) Programmets resurser och hur dessa har använts
- 5) Programmets användbarhet och förberedelse för ett föränderligt arbetsliv

This is the program evaluation for the three parallel MSc programs.

Resource Recovery- Biotechnology and Bioeconomy

Resource Recovery- Sustainable Energy Processes

Resource Recovery- Polymer Materials for a Circular Economy

Of the students admitted to the programs in 2022, four students successfully presented their thesis work in May 2024 and graduated. We had also 5 students who were registered to the joint master program in Resource recovery - Project Management for Sustainable Energy processes, which is within an educational cooperation connected to our master program in Resource recovery-Sustainable Energy Processes. Those five students studied courses for one semester in our program, and then completed their thesis project within the field of Resource recovery during the successfully graduated from the joint program. Furthermore, there are several exchange students from various countries, including France, Germany, and Turkey, who periodically participated in parts of the program to study different course modules. These exchange students frequently

integrate effectively into the class, fostering beneficial interactions with the program students, which consequently enhances their learning outcomes. This also creates opportunities for internationalization in the classroom.

Analysis of

1) Studenternas möjlighet till ansvar och delaktighet

Students are given multiple opportunities to influence the development of courses and programs through feedback. This happens via:

- Course evaluations during and at the end of each course
- Two mid-program evaluations (after Semesters 1 and 2), where students can provide feedback on the quality of the program and courses
- A final program evaluation, conducted at the end of masters studies alongside the thesis presentations
- Several discussions with teachers and program coordinator through the whole program

According to the program evaluation results, all students thought that the program had met their expectations. They expressed general satisfaction with the courses and provided specific feedback for improvements of some courses, which we have already begun implementing.

Students also appreciated the support during their master's thesis projects. Those who conducted their research in our laboratories valued the facilities, while those working externally were equally satisfied. Notably, all students indicated that they would recommend the program to others, which is highly gratifying.

2) Sambanden mellan programmets kurser samt mellan examensmål, lärandemål undervisningsformer och examinationer

The program employs various teaching and assessment methods, including traditional and online lectures, recorded sessions, laboratory work (both physical and simulated), seminars, group discussions, study visits, project work (with both written reports and oral presentations), and hands-on research. Since the introduction of the new MSc programs in Autumn 2021, a stronger focus has been placed on seminars, discussions, and case studies.. In the first semester, courses aim to acquire broad comprehension of the present and future aspects of resource recovery. This entails the ability to understand business insights and methodological knowledge, including life-cycle analysis. During the second year, the program offers courses related to the specific orientation selected by the students (biotechnology, energy, or polymer).

3) Forskningsanknytning i programmet

Several courses in the program contain research-oriented assessments, including finding information from the literature, analyzing the information, and making selections between the possible alternatives, writing reports, and scientific texts.

Students conduct their thesis projects in research-oriented environments, whether in our labs or through collaborations with external companies and researchers.

The program's strong research orientation is supported by faculty members who are active researchers in areas like thermal processes, polymer materials, biotechnology, and resource management. The courses highlight state of the art research, niches, and possibilities for future development in resource recovery.

4) Programmets resurser och hur dessa har använts

The program benefits from dedicated teaching teams and well-equipped laboratory facilities. Almost all faculty members, both junior and senior, contribute to both research and teaching, creating a unique environment where students are exposed to both foundational concepts and cutting-edge advancements in resource recovery.

Students are often invited to participate in research seminars taking place in different research groups. During the projects and case studies which are parts of some courses, students have opportunities to discuss research questions with doctoral students and researchers working with a relevant subject.

We have well-equipped laboratories in the Department of Resource Recovery, and all equipment is available for our courses and student projects. The availability of our teachers and lab resources outside the booked hours is very good and is often appreciated by students.

5) Programmets användbarhet och förberedelse för ett föränderligt arbetsliv

We are pleased to report that most of our graduates successfully enter the job market rather quickly after graduation. We are happy to see that our students have the expertise needed in the market, and that the industry values their knowledge. So far, **3/4** graduated students have already obtained **jobs** in Swedish industries and research institutes.

Additionally, about 50% of our current PhD students are alumni of our master's programs, and many of our graduates have received PhD offers from universities such as Chalmers, UME, LTU, Linnaeus University, as well as international institutions.