

Action plan for quality work - doctoral education programme in Resource Recovery

Department of Resource Recovery and Building Technology

The present action plan is based on the evaluation performed according to *Handläggningsordning för utvärdering och utveckling av utbildning vid Högskolan i Borås* (dnr 286-19). In its review of the education, the assessment group has applied the quality criteria for postgraduate education decided by the Research and Education Board. The criteria decided by the board are:

1. The education maintains high quality within the third-cycle subject area in terms of scientific/artistic breadth and scientific/artistic depth.
2. The design, content and execution of the education provide the postgraduate students with the conditions to achieve the examination objectives.
3. Processes and routines regarding follow-up of the postgraduate students' individual studies work satisfactorily.
4. The postgraduate students' education and educational environment
 - a. consider gender equality.Further promoted is
 - b. internationalisation,
 - c. sustainable development and
 - d. cooperation with the professions and the surrounding society
5. There is a continuous follow-up and development work that includes an active influence from the postgraduate students in order to strengthen the quality of the education.

The action plan must collect and make visible the department's measures with regard to highlighted criticism with the aim of improving the quality of the doctoral education programme concerned. The action plan is also expected to make visible how planned measures affect and improve other educational programmes and the research conducted at the department.

The action plan is based on the report compiled by the assessment group to convey its assessment of the doctoral education programme. The suggestions from the assessment group have been slightly reorganized in order to fit the structure of the criteria better.

1. A meeting where all supervisors were invited was held 14 September 2022.
2. The Director of Studies (Tomas Wahnström) compiled a first draft of the action plan that was distributed to the research group leaders.
3. An updated version of the action plan was presented at the Research Education Committee's (FUU) meeting 14 October 2022.
4. A further updated version was distributed to all supervisors asking for comments.
5. The action plan was sent to the Director of the Graduate School (Mohammad Taherzadeh), the Head of Department (Bo Månsson) and the Dean of Faculty (Tobias Richards) for final comments.
6. The final version was handed in to the Research and Education Board 1 November 2022.

Criterion 1

The education maintains high quality within the third-cycle subject area in terms of scientific/artistic breadth and scientific/artistic depth.

The assessment group's comments:

- a) The programme is of good quality in both depth and breadth as well as good quality in the various support structures that will facilitate the doctoral students' path to their defence of their doctoral theses. This applies both to theoretical and experimental elements.
- b) The quality valued from the number of publications and citations is very good as well as the impact factor for the journals chosen.

Measure/Proposal	Time plan/ Responsible	Outcome ¹	Responsible for follow-up	Working documents/Aids & Tools	KPI (Key Performance Index) ² /DoD (Definition of Done) ³
a) No specific measures proposed.					
b) No specific measures proposed.					

¹ Outcomes are about what a measure or a proposal should contribute to. You then start from what the difference should be when you have completed an activity/a proposal in full.

² KPI is a measurable value e.g. "A lecturer in subject X must be hired.", "We will reach the goal with 50 admitted students".

³ DoD is an agreement on when you feel complete and satisfied with your action i.e. a softer and not quantifiable measure.

Criterion 2

The design, content and execution of the education provide the postgraduate students with the conditions to achieve the examination objectives.

The assessment group's comments:

- a) Courses in Aspen Plus and Advanced LCA are very important courses within the PhD programme in Resource Recovery. Courses in leadership, IPR (Intellectual Property Rights), and communications skills are also demanded.
The Supervisors: Several of these courses are already given. Maybe some of them could be compulsory.
- b) The university-wide courses Theory of Science (ToS) and Research Ethics (RE) should be better integrated in the research area Resource Recovery.
- c) Allocate more hours for course development.

Measure/Proposal	Time plan/ Responsible	Outcome	Responsible for follow-up	Working documents/Aids & Tools	KPI (Key Performance Index) /DoD (Definition of Done)
a) Perform an investigation, together with the PhD-students, supervisors, and alumni, concerning the compulsory courses.	Fall 2023/ the Director of Studies	The PhD-students will have a better understanding of the Resource Recovery field.	The Director.	The ISPs The General Study Plan (GSP)	Updated GSP
b1) The course coordinators present and discuss the course content of ToS and RE with the supervisors.	23 November 2022./ the Research Education Coordinator (Kantola)	The supervisors will have a better picture of the course content.	The Director of Studies	The course plans. Course evaluations.	Better reflections in the course evaluations.
b2) Some representatives for the supervisors present and discuss the character of the research in Research Recovery with the course coordinators for ToS and RE.	Spring 2023/ the Director of Studies	The course coordinators will have a better picture of research in Resource Recovery.	The Director	The course plans. Course evaluations.	Better reflections in the course evaluations.
c) Allocate more hours for course development	Spring 2023/ the Head of Department	New rules	The Director of Studies	The teachers' service plans	The supervisors have enough time for planning of courses.

Criterion 3

Processes and routines regarding follow-up of the postgraduate students' individual studies work satisfactorily.

The assessment group's comments:

- a) The ISP should be more of a “living document” with personal comments from the supervisors and comments concerning at what level the PhD-student follows the plan.
The Supervisors: The ISP works well. The section “Thesis activities” shows at what level the plan is followed. Personal comments are taken orally with the PhD-student.
- b) The Learning Outcomes Matrix (LOM) should be developed and simplified.
- c) The PhD-students that also teaches should have a more long-term planning of their teaching activities.

Measure/Proposal	Time plan/ Responsible	Outcome	Responsible for follow-up	Working documents/Aids & Tools	KPI (Key Performance Index) /DoD (Definition of Done)
a) No specific measures proposed.					
b) Include a presentation of the PhD-students’ LOM at the ISP-meeting and simplify the LOM template.	Already introduced in spring 2022/ the Director of Studies	The PhD-students have a better understanding of their progression during the programme.	The Director.	Instructions for the LOM and the ISP-meeting (presented in the PhD-handbook)	The PhD-students will be able to explain her/his progression.
c) The planning of the teaching activities included in the ISP should be for a longer period of time.	Spring 2023/ the Director of Studies and the Head of Department	The PhD-students who teaches will have a better plan.	The Director.	The ISP.	The PhD-students are satisfied with the planning of their teaching

Criterion 4

The postgraduate students' education and educational environment consider gender equality, internationalization, sustainable development, and cooperation with the professions and the surrounding society.

The assessment group's comments:

- a) Recruit female professors.
- b) Allow docents to be examiners.
- c) A review in what sense the PhD-students are introduced to the international network of the supervisors should be done.
- d) The international PhD-students who often are externally employed have difficulties to gain experience from teaching.
- e) Increase the number of co-supervisors, co-authors and co-applicants from industry and arrange recurrent industry meetings
The Supervisors: We already have a good cooperation, but it is interesting to map it.
- f) Recruit adjunct professors from industry
- g) Arrange seminar series with invited speakers.
The Supervisors: We already have seminar series in the research groups.

Measure/Proposal	Time plan/ Responsible	Outcome	Responsible for follow-up	Working documents/Aids & Tools	KPI (Key Performance Index) /DoD (Definition of Done)
a) Recruit female professors	2024-26/ the Dean of Faculty	More female professors.	The Director of Studies	Recruitment Plan	A more equal work environment.
b) Allow docents to be examiners	Spring 2023/ FUU (Research Education Com.)	Increased number of possible examiners	The Director of Studies	Updated GSP.	Extended access to examiners.
c) Review of international networks	Fall 2023/ the Director of Studies	A better picture of the international networks.	The Director	Report	Increase in international networks.
d) Investigate the possibilities for externally employed PhD- students (samverk.dokt) to teach	Spring 2023/the Director of Studies	New regulations at the university level.	The Director.	Routines.	Better opportunities for the PhD- students to teach.

e) Investigate the number of co-supervisors, co-authors and co-applicants from industry and arrange recurrent industry meetings	Fall 2023/ the Director of Studies	A better picture of the cooperation with industry	The Director	ISPs, applications, publications	Better cooperation with industry
f) Recruit adjunct professors from industry.	2024-26/ the Dean of Faculty	Recruited adjunct professors.	The Director of Studies	Recruitment Plan	Increased collaboration with industry.
g) Arrange seminar series with invited speakers on the Resource Recovery level.	Spring 2024/ one or two of the supervisors	Increase the contact network	The Director	Information folders	External inflow of knowledge

Criterion 5

There is a continuous follow-up and development work that includes an active influence from the postgraduate students in order to strengthen the quality of the education.

The assessment group's comments:

- a) Alumni activities should be developed.
- b) The agreement with external companies regarding PhD-education should be further developed
- c) Guidelines for the PhDs teaching should be developed
- d) Some type of “skills development” for the supervisors should be introduced.

Measure/Proposal	Time plan/ Responsible	Outcome	Responsible for follow-up	Working documents/Aids & Tools	KPI (Key Performance Index) /DoD
a) Develop alumni activities.	2024/ the Director of Studies and the Communication Department	Contact data base Newsletter Social activities	The Director of Studies	Action plan at Communication dept	An inflow of experiences and knowledge from alumni.
b) Develop the agreement with external companies regarding PhD-education.	Spring 2023/ the Head of Dept	Agreement form	The Director of Studies	Agreement form	A better and clearer agreement with the companies.
c) Develop guidelines for the PhD-students teaching.	Spring 2023/ the Head of Dept	Guidelines	The Director of Studies	Guidelines	A clearer situation for the PhD- students when planning their teaching.
d) Introduce “skills development” for the supervisors.	Fall 2023/ the Director of Studies	Recurrent supervisor meetings where experiences are exchanged	The Director	Information-mail	Improved supervision.