

IHE Delft

Research Master in Water and Sustainable Development

Assessment NVAO conditions

June 2022

Introduction

In April 2021, an NVAO panel assessed two new master's programmes of IHE Delft: the MSc in Water and Sustainable Development (68 EC) and the Research Master in Water and Sustainable Development (120 EC). The advice on the regular MSc programme was positive, whereas the advice given on the Research Master was conditionally positive. The panel was positive about the Research Master's intended learning outcomes and the system of student assessment, but concluded that the teaching-learning environment did not sufficiently show the required characteristics of a Research Master programme. The panel noted that the admission procedure was not geared to the requirements for a Research Master because it did not assess the applicants' critical thinking and problem solving capabilities. The panel also noted that, in the first year modules, students of the Research Master would be grouped together with students of the regular (1 year) Master, without including higher learning objectives or additional assignments. The research orientation belonging to a Research Master programme was, therefore, not visible from the beginning. The level of the elective courses should also be more clearly guaranteed to be at an appropriate level for a Research Master.

The NVAO followed the panel's advice and, in November 2021, granted IHE Delft conditional accreditation of its new Research Master in Water and Sustainable Development. The conditions to be met within a period of two years were the following:

1. adapt the admission requirements to ensure that applicants' research and analytical skills are taken into account in the selection procedure;
2. strengthen and guarantee the research orientation in the taught modules of the first year;
3. strengthen and guarantee the research orientation in the electives of the second year.

In April 2022, IHE Delft described in a document (Follow up to NVAO conditions for accreditation of the Research Master in Water and Sustainable Development) how it addressed the panel's conditions. IHE invited the 2021 NVAO panel to assess whether the programme now meets the criteria for a Research Master programme.

All panel members accepted the invitation and a site visit was scheduled on 13 May 2022. During the preparatory phase, it turned out that, for logistical reasons, the original student member was not able to participate. It was possible to replace him at short notice by another student member, who had been involved in the IHE institutional audit in 2019 and was thus familiar with the institute. NVAO and IHE approved this change in the panel composition.

This led to the following panel composition:

- Prof. dr. Isa Baud (chair), University of Amsterdam, Faculty of Social and Behavioural Sciences;
- Prof. dr. Jaap Kwadijk, University of Twente, Faculty of Engineering Technology;
- Dr. Karin Rebel, University of Utrecht, Faculty of Geosciences, Senior Fellow Center for Academic Teaching;
- Aindre Maame-Fosua Evans (student member), Senior Research Assistant at the Kwame Nkrumah Institute of African Studies, University of Ghana; graduate student at Oxford University.

The panel was supported by Dr. Marianne van der Weiden, independent secretary.

Assessment

Admission procedure

For the new admission procedure, IHE has formulated stricter criteria than for the regular master. Applicants should have a bachelor's degree at least equivalent to a UK Upper Second-class Honours degree or a GPA score of at least 75% of the scale maximum. The entry requirement for English language proficiency is higher than for the regular master, because academic reading and writing need to be guaranteed skills in a Research Master programme.

An essential element in the admission procedure is the applicant's motivation statement. In addition to the questions to be answered by all applicants, applicants for the Research Master must motivate why they prefer the Research Master programme over the regular MSc programme and indicate the field in which they would like to do research. If possible, they should mention concrete research questions they would like to address during their study. The applicant's motivation is a knock-out criterion. The statement must convince IHE that the applicant (1) makes a deliberate and reasoned choice to pursue a research career, (2) has a research interest matching his/her background and career ambitions, (3) is able to express him/herself clearly and convincingly in English, (4) understands and values the more individual learning style in the Research Master programme, and (5) demonstrates independence, curiosity and eagerness to learn.

All documents (transcripts, CVs and motivation statements) are screened for affinity with research, relevant work experience, and future career plans. Once a file is complete and all criteria are met, it is forwarded to the relevant academic department with matching research interest. They can (1) reject an applicant based on quality and motivation, (2) re-direct them to another department for a better match with the research interest indicated, or (3) decide to interview and subsequently accept or reject the candidate. In the interview, effective communication, critical thinking, analytical skills, enthusiasm and creativity are assessed. The interview is held by an experienced and active researcher of the department, appointed by his/her department to act as a coach for the students of the Research Master. After acceptance, the applicant is formally 'academically admitted' by the Registrar and needs to secure funding. If funding is secured, the applicant will be 'financially admitted'.

The panel considers this a suitable procedure to select students with a strong research interest and capabilities.

During the site visit, the panel asked whether it would be possible for students in the regular Master to transfer to the Research Master in the course of the programme, as envisaged in the original NVAO procedure. IHE intends to make it clear for applicants during the admission process that it offers two different options, and to guide them to the right choice. A practical issue would be that it is difficult to change scholarships. Nevertheless, IHE does not want to exclude the possibility. If certain students, on the basis of their performance in the regular Master, could transfer, it would be on an individual basis, and has to take place within the first seven months of the programme. In such a case, additional work would be assigned during the summer, before the start of the second year of the Research Master. The panel advises to make clear to students what the criteria and procedures would be in such a case; the procedure should be written down and be available when it becomes applicable. The panel also suggests to not only list the departments and their research on the website, but also to present staff profiles, so students can make an informed choice of coaches and supervisors before they come. For some applicants, this information could be an argument to apply for the Research Master at IHE.

The panel concludes that the admission procedure **meets the condition** set by NVAO.

Research orientation in the taught part of the first year

IHE has made good use of their study on the set-up and experience of comparable Research Master programmes at other universities in the Netherlands, gathering information on how they organise a Research Master curriculum in which core modules are shared with a regular Master programme. This led to two adaptations to strengthen the research orientation in the taught part of the first year: (1) coaching by an experienced researcher throughout the programme, and (2) extension of the module on science philosophy (module 9) across the modules 2-8, with additional assignments for Research Master students that culminate in the final section of module 9.

An important role is expected from the student's coach. As mentioned above, the coach is an experienced and active researcher. The coach is involved in IHE research projects and/or PhD supervision, and a member of the SENSE research school. Each department will appoint one or two staff members as coaches, depending on the number of expected students. A coach in the Research Master programme is involved with the students mainly during the first year of the programme. The coach not only guides the student through the programme, helping them to articulate what they want to learn, and to select track modules in line with their envisioned research topic, as is the coach's role in the regular Master. The Research Master coach also works with the students individually and collectively during the additional assignments and mixed weeks on critical science reflection. In the second year, the coach will continue to be available, but the student's mentor will play a more prominent role. The roles of coaches and examiners are separate, so a coach will not be involved in assessments, not even when they are formative assessments. An exception is the coach's involvement with the Research Diaries (part of module 9). The coach monitors that they are written as intended and will give feedback if necessary on the quality of the reflections, together with the module coordinator (formative assessment). The module coordinator has the final responsibility for the assessment. Although a coach has, therefore, no role in assessment, the possibility that a coach can be a student's mentor is not excluded. The main criterion is whether a good match is achieved between student and coach. The panel understands that students are able to change their coach if there is no match. It is important to be explicit about this possibility and the rules around it. The panel appreciates that coaching in the Research Master programme will be more individual and more substantive and research oriented than in the regular Master.

IHE expects approximately 20 students yearly for the Research Master and is confident that the institute's favourable staff-student ratio of 1:4 will ensure that departments have sufficient time to allocate to their coaches. IHE allocates 20-25 hours per student for coaches in the first year. During the second year 20 hours will be allocated, but IHE expects that the number of hours spent will be less, because the MSc thesis mentors will play a larger role. The panel advises to monitor closely in the first years to ascertain if this estimate is realistic, in order to avoid a workload for the coaches which is too high. A system of time writing could be helpful, on the condition that the management makes it clear to staff that this is for monitoring and not for accountability purposes. Staff should be informed that the aim of such a system is learning whether the time allocation is reasonable and sufficient, in order to adjust the time allocation, if necessary.

During the first eight months, students in the Research Master will share track modules (1-8) with students of the regular Master. This will ensure that they gain a sufficient level of disciplinary and technical knowledge, and also that they are exposed to diverse ways of reflecting on and assessing this knowledge and the concomitant scientific methods. They will experience the differences in perspectives between practitioners and researchers from different disciplines. To ensure the research orientation during this part of the programme, Research Master students will participate in

additional activities in parallel to the track modules. Module 9, on science philosophy, will be extended and consist of two parts: Science Reflection (2 EC) and Science Philosophy (5 EC).

In the first part, starting during module 1, students are asked to critically reflect on knowledge and insights gained during the track modules and place these in the context of broader scientific questions related to the learning outcomes of the programme. During each track module, the Research Master students have the additional task of critically reflecting on the module content, guided by specific science questions per block of two modules. They write their reflections in an online research diary. A format for the diary, including the questions, was available for the panel. In the mixed weeks between the modules, students exchange their reflections in discussion sessions that are compulsory for all research students from a cohort. The coordinator of module 9 will facilitate the discussion sessions during the mixed weeks and monitor the progress of the research diary, supported by the Research Master coaches. The second part of module 9, Philosophy of Science and History of Water Wisdom, addresses the fundamental question of what science is and what makes research scientific. Its perspective is historic and cross-cultural.

The panel considers this extension of module 9 a suitable way to strengthen the research orientation of the first year, while combining regular and Research Master students in the track modules. The work on the research diaries, based on individual reading and thinking in interaction with the coach, is well-complemented by the collective discussions in the mixed weeks. The panel suggests that more interaction among the Research Master students between the mixed weeks could be helpful, e.g. by organising a brainstorm at the beginning of a block of modules. Similar to the panel's advice regarding the coaches, the panel advises monitoring to determine whether the envisaged time allocation for the module 9 coordinator is sufficient in practice.

Summing up, the panel supports the choices made for the first year of the Research Master. The central role of coaches who will provide substantive guidance at a reflective level, the collective reflections on science during the mixed weeks and the new position of module 9, are useful ways to distinguish between the two groups of students. Not all implications of this new system have been fully thought through yet. The panel, therefore, advises IHE to set up a monitoring system; including (1) the monitoring of the time allocation provided to coaches to determine feasibility in practice, and (2) ensure explicit recognition of the work involved for coaches and coordinators, in terms of criteria for career promotion, endorsed by the Board and higher management. The system can usefully be based on feedback mechanisms during the whole programme, involving students, staff and management. This will allow IHE to learn early on about the feasibility of the new approach for both staff and students and to make necessary adjustments.

The panel concludes that the research orientation in the taught part during the first year **meets the condition** set by NVAO.

Research orientation of the electives during the second year

IHE has adapted the design of the preparatory phase of the thesis research by adding a Research & Learning Plan (2 EC), structuring the science methodology component and sharpening the selection criteria of the electives.

At the end of module 8, students have selected a topic for their thesis research and been allocated a supervisor and one or two mentors. After module 9, students prepare a Research & Learning Plan in consultation with their supervisory team: they outline the research topic and rationale, their personal learning goals of the thesis phase and the knowledge and courses needed to be able to

implement the thesis research. The plan must include methodology courses, and electives to address gaps in knowledge and skills that are needed for the research on the chosen topic. The IHE staff explained that electives may be a tailor-made course or tutorial, but can also be an existing course, either offered by IHE or another university. In existing courses, no additional activity or reflection is required from the Research Master students. IHE explained that critical reflection will be assessed during the writing process of the thesis proposal, while the electives are meant to fill any knowledge or skills gaps, identified in the Research & Learning Plan. Electives are meant for added value beyond the foundational stage. The plan must be endorsed by the supervisory team and Programme Committee who ensure that the course selection is in line with the research objectives and carries a sufficient weight and level. This process is comparable to that of PhD students. The panel appreciates the further explanation and is convinced that the electives are now a well-established substantive part of the programme.

In parallel with the research proposal development, students follow an advanced academic skills course. This course is meant for the whole cohort and focuses on academic skills, specifically targeting the written skills. Students are given three assignments, in critical reading, writing and reviewing. Staff explained that while the course is built on a common understanding of academic writing, the assignment topics are geared to the individual students. This course is also open for beginning PhD candidates registered at IHE and following courses at SENSE. The panel considers the links with PhD candidates a positive feature for the Research Master students. A more deliberate linkage of this course to the critical science reflections found in module 9 would be a nice addition.

The panel concludes that the research orientation of the electives during the second year **meets the condition** set by NVAO.

Conclusion

The panel concludes that the admission procedure has been adapted and now reflects the additional requirements for a Research Master. The research orientation in the second year has been strengthened: the substantive role and position of electives is now much better established, linked to the Research & Learning Plan.

The panel is also satisfied with the proposed changes in the first year: the role of the coaches and the extension of module 9 will ensure the research orientation. Even though regular Master students and the Research Master students attend the same track modules, the additional assignments and additional learning objectives will make an appropriate distinction between the two groups. Regarding the implementation of these changes, the panel appreciates that IHE has a favourable staff-student ratio, but advises strong interactive feedback loops at all staff and management levels (strategy, standards and monitoring) to check the effectiveness and feasibility of the new arrangement for both teaching staff and students.

The panel concludes that the three conditions are met and advises NVAO to take a positive accreditation decision for the Research Master in Water and Sustainable Development of IHE Delft.

On behalf of the entire assessment panel,

Utrecht, 14 June 2022

Prof. dr. Isa Baud, chair

Dr. Marianne van der Weiden, secretary

Annex 1

Programme of the site visit

Friday 13 May 2022	Panel visit to IHE Delft regarding conditions Research Master programme
13h00 – 14h	Preparatory meeting panel
14h – 14h30	Welcome by representatives of the board and management of IHE: welcome and process Rectorate representatives
14h30 – 14h45	Break and short internal meeting of the panel
14h45 – 15h30	Admission process for the Research MSc Head Education Bureau, Admission Officer, Member programme committee
15h30 – 15h45	Break and short internal meeting of the panel
15h45 – 16h30	Research orientation of the taught programme during the first year Vice rector, representatives from Programme committee and lecturing/research guiding Staff
16h30 – 16h45	Break and short internal meeting of the panel
16h45 – 17h15	Research orientation of the electives and proposal development during the second year Representatives from Programme committee and lecturing/research guiding Staff
17h15 - 17h30	Break and short internal meeting of the panel
17h30 – 17h45	Closing & feedback of the chair of the panel to representatives of IHE