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Project code P2220

Contents

Summary

Standard 1. Intended learning outcomes

The master's programme Information Science aims to train students to be able to function as junior researchers in the field of information science. The programme has a strong research orientation and a distinctive focus on ethical and societal responsibility. The programme consists of two tracks: 'Business Informatics' (BI) focusing on organizations, and 'Human-Computer Interaction' (HCI) focusing on individual users. The panel considers the programme's learning outcomes appropriate for the academic fields of BI and HCI and in line with the academic master's level. According to the panel, the programme has a distinctive profile in the Netherlands, which is especially reinforced by the HCI track. The programme has clearly defined the fields of BI and HCI, but the panel feels that this should be further elaborated into an integrated vision. Also, the research orientation of the programme needs to be made more consistent and better aligned with the envisioned professional field for graduates. The panel advises the programme to better define the prospective professional field for each individual track, and consequently reflect on the definition of research in light of the professional field. As part of this process, the programme is advised to consider placing more emphasis on the application of knowledge in professional settings in the learning outcomes. To better define the prospective job market, the panel advises the programme to implement its plans to install a professional advisory board for systematic consultancy with the professional field. This will also contribute to further aligning the learning outcomes with the expectations and needs of the professional field.

Standard 2. Teaching-learning environment

According to the panel, the curricula of the programme's two tracks (BI and HCI) are well structured, demonstrating solid constructive alignment. The research orientation is clearly reflected in the curriculum. The panel is also positive about the honour's programme and the opportunities for entrepreneurship during the programme. The panel sees room for improvement with regard to an issue pointed out by students, concerning overlap between the content from the master's programme and the bachelor's programme of Information Science. The panel recommends exploring ways to reduce repetition for students, possibly by offering homologation courses. Academic and professional skills are well embedded in the curriculum. The panel does advise the programme to take the students' suggestion about integrating a portfolio in the curriculum into consideration, especially for the HCI track. Also, having more guest lecturers come in to share their experience in the job market may be helpful. The programme is taught in English, which, according to the panel, follows logically from the international nature of the field of information science and is necessary in light of the international students and teaching staff. Students can go abroad for a period of time, as part of electives and/or the master thesis research project. However, the curriculum structure makes it rather difficult to go abroad in the elective space without missing mandatory courses or the thesis project introduction sessions. The programme is advised to explore how going abroad can be further facilitated without negatively affecting the experience and feasibility of the thesis project.

The didactic approach is based on the university's educational model and includes a focus on interaction and community building in small scale settings and the explicit choice for on-campus activities. The panel sees valuable elements of a didactic vision, but thinks the programme needs to develop a stronger overall didactic vision to guarantee sufficient and consistent quality of teaching across the courses. During the programme, study advisors are available for students with questions and concerns about their study. Study advisors can refer to other counsellors when necessary. The panel concludes that student guidance is well set up. Also, the study progress of students is in order. Although there is study delay, this is not out of the ordinary and does not seem to be caused by issues regarding the feasibility of the programme.

According to the panel, the teaching staff is sufficiently qualified the teach the courses and supervise the research projects. The panel is pleased to see the involvement of more full professors since the previous accreditation. It commends the teaching staff for their positive and supportive attitude towards students, who in turn feel heard and taken seriously. The majority of the lecturers holds a University Teaching Qualification (UTQ). The panel underlines the plans to further increase this number.
The panel is impressed by the lab facilities the programme offers, which create ample opportunity for students to carry out interesting projects and learn relevant skills.

Standard 3. Student assessment

Assessment in the programme is based on the faculty's sound assessment policy and thoroughly elaborated in the programme's assessment plan. A variety of test methods are applied in the programme and each course is assessed through multiple tests (both group and individual assessments). Formative assessment is systematically embedded in the programme, a.o. by means of an intermediate assessment in each course. Theses are always assessed by two supervisors. The panel is very positive about the detailed assessment forms for the thesis and the rich feedback provided to students. The programme includes a lot of group work (though never as the sole test method in a course), which allows student to practice skills like cooperation. The panel suggests making use of peer assessment to gain insight into each individual student's contribution to the group result, in order to minimize the potential negative aspects of group assessment. To ensure that students are required to make an effort, the faculty applies a minimal grade clause. Although the panel agrees with this clause in principle, it does advise the programme to evaluate the effectiveness of the clause and to see to the correct implementation of the policy. Students appeared to be under the impression that the publishability of the thesis is a factor in the grading, although the programme assured it is not an assessment criterion. The panel advises the teaching staff to communicate to students about this in a more consistent way.

The programme employs student-assistants for supervision during some projects and workshops. These student-assistants also provide the students with feedback and have advisory role in the grading process for some projects within courses, while the lecturer always has final responsibility for the assessment. The panel concludes that the quality of the student-assistants varies and that grading criteria may not always be applied consistently. The programme is advised to ensure that all student-assistants are properly trained and proactively supervised by the responsible lecturers. The panel considers the Board of Examiners to be competent and in control. The Board succeeds at safeguarding the quality of assessment and the exit level, a.o. by means of annual reviews of samples of courses and theses.

Standard 4. Achieved learning outcomes

Based on the sample of 15 theses reviewed, the panel concludes that the level demonstrated in the theses in appropriate for an academic master's programme. The panel appreciates the diversity of topics covered in the theses and is pleased to see that several theses have led to publications. The figures included in the documentation and the interview with alumni show that graduates are successful and well-prepared for a job in the professional field.

Score table

The panel assesses the programme as follows:

M Information Science	
Standard 1: Intended learning outcomes	meets the standard
Standard 2: Teaching-learning environment	meets the standard
Standard 3: Student assessment	meets the standard
Standard 4: Achieved learning outcomes	meets the standard
General conclusion	positive

Prof. Olga De Troyer
Chair

Anne-Lise Kamphuis MSc
Secretary

Date: 24 January 2024

Introduction

Procedure

Assessment

On 5 and 6 October 2023, the master's programme Information Science of Utrecht University was assessed by an independent peer review panel as part of the cluster assessment Information Science. The assessment cluster consisted of 8 programmes, offered by the Open Universiteit, Radboud University, University of Twente, Utrecht University and Vrije Universiteit Amsterdam. The assessment followed the procedure and standards of the NVAO Assessment Framework for the Higher Education Accreditation System of the Netherlands (September 2018).

Quality assurance agency Academion coordinated the assessment upon request of the cluster Information Science. Peter Hildering acted as both coordinator and secretary, and Anne-Lise Kamphuis and Linda te Marvelde acted as secretaries in the cluster assessment. They have been certified and registered by the NVAO.

Preparation

Academion composed the peer review panel in cooperation with the institutions and taking into account the expertise and independence of the members, as well as consistency within the cluster. On 20 July 2023, the NVAO approved the composition of the panel. The coordinator instructed the panel chair on her role in the site visit according to the Panel chair profile (NVAO, 2016).

The programme composed a site visit schedule in consultation with the coordinator (see appendix 3). The programme selected representative partners for the various interviews. It also determined that the development dialogue would be made part of the site visit in the shape of thematic sessions. A separate development report was made based on this dialogue.

The programme provided the coordinator with a list of graduates over the period 2021 – 2023. In consultation with the coordinator, the panel chair selected 15 theses per programme, taking the diversity of final grades and examiners into account, as well as the various tracks. Before the site visit, Academion received the relevant documentation from the programmes, consisting of an extensive set of current documentation pertaining to the four standards of examination that, together with a cover letter and SWOT analysis, served as self-evaluation report. This included a comprehensive analysis of the programmes' strengths and weaknesses, and a separate and independent student chapter along with the required appendices. Before and during the site visit, the panel studied the additional documents provided by the programmes. An overview of these materials can be found in appendix 4.

The panel members studied the information and sent their findings to the secretary. The secretary collected the panel's questions and remarks in a document and shared this with the panel members. In a preliminary meeting, the panel discussed the initial findings on the self-evaluation report and the theses, as well as the division of tasks during the site visit. The panel was also informed on the assessment framework, the working method and the planning of the site visits and reports. The panel offered students and staff members an opportunity for confidential discussion during a consultation hour. No consultation was requested.

Site visit

During the site visit, the panel interviewed various programme representatives (see appendix 3). The panel used the final part of the site visit to discuss its findings in an internal meeting. Afterwards, the panel chair publicly presented the preliminary findings.

Report

The secretary wrote a draft report based on the panel's findings and submitted it to the coordinator for peer assessment. Subsequently, the secretary sent the report to the panel for feedback. After processing this feedback, the secretary sent the draft report to the programme in order to have it checked for factual irregularities. The secretary discussed the ensuing comments with the panel chair and changes were implemented accordingly. The panel then finalized the report, and the coordinator sent it to Utrecht University.

Panel

The following panel members were involved in the cluster assessment:

- Prof. Olga De Troyer, emeritus professor of Computer Science, Vrije Universiteit Brussel – chair;
- Prof. Geert Poels, professor of Management Information Systems, Ghent University;
- Prof. Alessandro Bozzon, professor of Human Centered AI, Delft University of Technology;
- Prof. Jos van Hillegersberg, professor of Data Science in Business, Jheronimus Academy of Data Science (Tilburg University and Eindhoven University of Technology);
- Prof. Jürgen Ziegler, professor of Interactive Systems, University of Duisburg-Essen;
- Prof. Barbara Pernici, professor of Computer Science and Engineering, Politecnico di Milano;
- Prof. Remco Dijkman, professor of Information Systems, Eindhoven University of Technology;
- Prof. Marijn Janssen, professor of ICT and Governance, Delft University of Technology;
- Kelly Kurowksi BSc, master student Business Informatics, Utrecht University – student member;
- Amber Pater BSc, master student Information Sciences, Radboud University – student member.

The panel assessing the master's programme Information Science at Utrecht University consisted of the following members:

- Prof. Olga De Troyer, emeritus professor of Computer Science, Vrije Universiteit Brussel – chair;
- Prof. Geert Poels, professor of Management Information Systems, Ghent University;
- Prof. Alessandro Bozzon, professor of Human Centered AI, Delft University of Technology;
- Amber Pater BSc, master student Information Sciences, Radboud University – student member.

Information on the programme

Name of the institution:	Utrecht University
Status of the institution:	Publicly funded institution
Result institutional quality assurance assessment:	Positive

Programme name:	M Information Science
CROHO number:	60809
Level:	Master

Orientation:	Academic
Number of credits:	120 EC
Specializations or tracks:	Business Informatics Human Computer Interaction
Location:	Utrecht
Mode(s) of study:	Fulltime
Language of instruction:	English
Submission date NVAO:	1 May 2024

Description of the assessment

Recommendations previous panel

The documentation included an overview of how the programme followed up on the recommendations given by the previous accreditation's panel (2018). Also, several recommendations and their follow-up actions were discussed with the programme during the site visit. The panel concludes that the recommendations have been seriously acted upon by the programme. The panel is generally content with the improvement measures taken and sees that these have contributed to improved quality of the programme. For some recommendations it became clear that the programme is still in the process of addressing these. These issues will be described in this report.

Standard 1. Intended learning outcomes

The intended learning outcomes tie in with the level and orientation of the programme; they are geared to the expectations of the professional field, the discipline, and international requirements.

Findings

Vision
As described in the vision-document included in the documentation, the master's programme Information Science has a strong research orientation. The programme aims to train students to be able to function as junior researchers in the field of information science. Also, the programme has a distinctive focus on ethical and societal responsibility. The programme consists of two tracks: 'Business Informatics' (BI) focusing on organizations, and 'Human-Computer Interaction' (HCI) focusing on individual users.

BI focuses on the design and use of theories, methods, techniques and tools from information and computing sciences for application in business and organizational settings. BI is characterized by a holistic approach of organizations, which, according to the programme, is necessary to align business and information technology. Besides having a thorough understanding of information technology, graduates should also be able to analyse the organizational setting and the purpose and optimal design and implementation of information technology within that setting. The vision-document states that BI prepares for professions such as IT consultant, business analyst, process analyst, product/project manager and data scientist.

The HCI track was introduced in 2019. It focuses on research in the HCI-domain, which is concerned with the design, evaluation and implementation of interactive computing systems for human use. The track is characterized by the equal emphasis on the human/psychological side and the technological side. This approach distinguishes the track from similar HCI related programmes in other Dutch universities, which mostly centre around design or media technologies only. Graduates have a solid background in relevant psychological theories and qualitative, quantitative and design-based research methodologies, enabling them to analyse users' needs and experiences and to create and evaluate interaction technology designs. As described in the vision-document, this track prepares students for professions such as HCI consultant/researcher, information analyst and UX designer.

The panel is positive about the programme's distinctive position in the Netherlands, which is especially reinforced by the HCI track. The programme is currently the largest master's programme in Information Science in the Netherlands. The large and growing number of students shows that the two-year research-oriented programme is attractive for students, even compared to one-year master's programmes in Information Science at other universities. However, the panel recommends the programme to further elaborate its vision. The vision-document provides a definition of the fields of BI and HCI, but this should be further elaborated into an integrated, shared vision for the programme and the tracks. Also, the panel thinks that the research orientation of the programme needs to be made more consistent and better aligned with the envisioned professional field for graduates.

During the site visit, various delegations of the programme shared their ideas regarding the research orientation and professional field. The panel concludes that the programme's vision and ambitions on this matter could be better aligned and made consistent. In some interviews the research orientation was strongly associated with future prospects for graduates in PhD positions or R&D departments in companies. However, the panel notes that the majority of the graduates do not work in these types of positions. Rather, many start working as engineers, consultants, or UX designers. According to the panel, it is not entirely clear how 'research' is defined by the programme and what the ambitions are regarding both academic and applied research. Related to this, the intended professional fields connected to the two tracks are not clearly defined. Therefore, the panel advises the programme to better define the prospective professional field for each individual track, and consequently reflect on the definition of research in light of this professional field. This should result in a consistent and integrated vision of the research orientation. To better define the prospective job market, the panel advises the programme to implement its plans to install a professional advisory board. This will allow for systematic consultancy and discussion with the professional field.

Learning outcomes
In the Education and Examination Regulations for the faculty's master's programmes (Graduate School of Natural sciences) a list of general learning outcomes of the programmes is described. These are further specified in the annex for Information Science. For the track BI, 20 learning outcomes are described. For the track HCI, 25 learning outcomes are described. For both tracks, the learning outcomes are divided into the five categories of the Dublin descriptors (see Appendix 1).

The documentation includes the MSIS2016, a global competency model for graduate degree programmes in Information Systems, which was developed by a joint taskforce from the Association for Computing Machinery and the Association for Information Systems. This model serves as a reference framework for defining the objectives of the Information Science programme, although the management indicated that IS2016 does not fully match the programme. According to the programme, BI is more technical than the typical programmes described in MSIS 2016, while HCI has different learning outcomes altogether. At the moment, there is no appropriate frame of reference for external validation of the learning outcomes and curriculum due to the unique position of the programme.

The panel considers the learning outcomes appropriate for the academic fields of BI and HCI. Also, they clearly demonstrate the academic orientation and the master level as described in the Dublin descriptors. The panel sees room for improvement with regard to the learning outcomes describing the application of knowledge, as these all focus on research only. To align with the prospective professional field, the panel thinks that additional learning outcomes concerned with applying knowledge in professional settings would be appropriate. The panel advises the programme to investigate this matter as part of the process of elaborating the vision and the definition of the professional field and research orientation (as described

earlier) to optimally align the vision and the learning outcomes. Also, the panel recommends involving representatives of the professional field in this process, for example a professional advisory board, to ensure alignment with the expectations and needs of the professional field. According to the panel, this is all the more important since no fully adequate reference framework is available for the programme.

Considerations

The panel considers the programme's learning outcomes appropriate for the academic fields of BI and HCI and in line with the academic master's level. According to the panel, the programme has a distinctive profile in the Netherlands, which is especially reinforced by the HCI track. The programme has clearly defined the fields of BI and HCI, but the panel feels that this should be further elaborated into an integrated vision. Also, the research orientation of the programme needs to be made more consistent and better aligned with the envisioned professional field for graduates. The panel advises the programme to better define the prospective professional field for each individual track, and consequently reflect on the definition of research in light of the professional field. As part of this process, the programme is advised to consider placing more emphasis on the application of knowledge in professional settings in the learning outcomes. To better define the prospective job market, the panel advises the programme to implement its plans to install a professional advisory board for systematic consultancy with the professional field. This will also contribute to further aligning the learning outcomes with the expectations and needs of the professional field.

Conclusion

The panel concludes that the programme meets standard 1.

Standard 2. Teaching-learning environment

The curriculum, the teaching-learning environment and the quality of the teaching staff enable the incoming students to achieve the intended learning outcomes.

Findings

Curriculum

The master's programme Information Science consists of 120 EC and is offered as a full-time, two-year programme (see Appendix 2 for a curriculum overview). There are two starting dates per academic year, one in September and one in February. The curriculum consists of 75 EC for mandatory courses and 45 EC for elective space. The mandatory courses include a master thesis project of 40 EC (15 EC for the project proposal and 25 EC for the research project and thesis). Each year is divided into four periods. The first five periods are dedicated to courses, while the last three periods focus on the thesis research project. The research project can be carried out in a research group within the university or at a company.
In the BI track, students can choose one of three study paths ('Software', 'Processes', or 'Data') to shape their study programme. The chosen study path mainly affects the selection of electives and the type of research for the master thesis. These study paths were introduced as part of a revision of the BI curriculum in response to a recommendation from the previous accreditation's panel. BI students may follow one of the faculty-wide profiles (30 EC) 'Science-based Entrepreneurship', 'Educational' or 'Communication' as part of their study programme. HCI students may choose to follow the faculty-wide profile 'Complex Systems'. Students in the Information Science programme also have the opportunity to follow a (selective) honour's trajectory in the faculty focussed on research.

The panel thinks that the curricula of the two tracks are well structured. It appreciates how the curriculum of the BI track has been improved since the previous accreditation, now having three clear study paths. The panel is also positive about the faculty-wide honour's programme and about the opportunities for entrepreneurship during the programme. The research orientation is clearly reflected in the curricula, a.o. in the attention for research methodology and in the extensive thesis research project. Also, the focus on ethical responsibility is integrated into many courses in the programme. For the thesis research project, for example, students are required to perform a quick scan on ethics and privacy as part of the research proposal. The panel is pleased with the solid constructive alignment throughout the curricula, as is demonstrated in the assessment plan. It is clear from the assessment matrices that all learning outcomes are covered in the curricula.

According to the panel, academic and professional skills are well embedded in the curricula. In the interview during the site visit and in the student chapter, students from the HCI track mentioned that it would be helpful to build a portfolio during the programme to showcase their projects and skills. This would be an advantage when applying for jobs, as employers often ask for a portfolio. The panel advises the programme to take this suggestion into consideration. Also, students of both tracks mentioned that they would appreciate it if the programme paid more attention to orientation on and preparation for the job market. In this respect, the panel thinks that it may be helpful to have more guest lecturers come in to share their experience in the job market.

The interview with students and the student chapter also indicated that students feel that there is overlap between the courses in the bachelor's programme Information Science and some mandatory courses in the master's programme. The panel understands that some repetition may be inevitable because students have diverse bachelor backgrounds. However, the panel thinks that the overlap issue should be further investigated. The panel recommends the programme to look for ways to reduce repetition for students entering the master's programme from the bachelor's programme Information Science. Offering homologation courses to students from different backgrounds may be one of the possible ways to tackle this issue.

Internationalization
The programme has an international focus, is taught in English, and uses an English-language name. According to the panel, this follows logically from the international nature of both the academic field and the professional field of information science. English is the common language in this field. Teaching in English is also necessary because there is a steady proportion of international students. Moreover, part of the teaching staff is non-Dutch.

During the master's programme, students can go abroad for a period of time, as part of electives and/or the master thesis research project. During the site visit, students indicated that going abroad is very much encouraged and well-facilitated. However, the curriculum structure is quite rigid, with mandatory courses in almost all periods, making it difficult to go abroad as part of elective space without missing important classes. The fifth period consists mostly entirely of electives, which would allow students to go abroad. However, several introductory sessions for the thesis research project are scheduled in this period, which gives students the feeling their thesis project would be negatively impacted by going abroad. The panel advises the programme to explore how going abroad can be further encouraged and facilitated without negatively affecting the experience and feasibility of the thesis project.

Didactic approach

The didactic approach is based on the university's educational model. In the interview, the management explained that the faculty's educational vision is currently being refined. Some elements of the didactical vision include a focus on interaction and community building and the explicit choice for on-campus activities. The programme aims for small-scale settings and values to the practical application of theoretical knowledge. Also, the courses contain a lot of group projects/assignments. The amount of group assignments is mentioned as an issue in the student chapter. It is also identified as a weakness in the SWOT-analysis provided in the documentation (a.o. because of the risk of free rider behaviour). On the other hand, the management, the students, and the panel appreciate the group projects as they contribute to learning skills like cooperation. As part of standard 3 (student assessment), the panel will discuss a suggestion to reduce possible negative effects of group assignments as experienced by students and lecturers.

The panel considers the educational model adequate and appreciates the diverse didactical methods applied in the programme. The interviews with students and alumni show that students are somewhat critical of the teaching methods in some courses. The quality of the teaching (method) seems to depend to a large degree on the particular lecturer, resulting in a mixed picture and varying quality. The management indicated that it is difficult to work with one didactic concept in the programme because the courses are very diverse, requiring different didactic approaches. The panel understands this but thinks it is important for the programme to develop a stronger overall didactic vision, with sufficient room for the desired diversity with regard to specific teaching methods in courses. This overall didactic vision should be made more explicit to guarantee an appropriate didactic approach and sufficient quality of teaching across the courses.

Guidance

In the courses, students are primarily supervised and guided by the lecturers and, in some cases, student-assistants. For overall programme related issues, the programme coordinator is the student's first point of contact. Study advisors are available for overall advice and guidance. Students with questions or concerns can contact the study advisor. When necessary, the study advisor can refer students to other counsellors. The study advisor can also proactively contact students when concerned about study progress. Based on the interviews during the site visit, the panel concludes that students are content about the study advisors and guidance in general. Also, they indicated that relevant information and documents are easy to find, a.o. on Canvas and Osiris. The panel is positive about how communication with students and student guidance has been set up in the programme.

Study success

The documentation indicates that about three-quarters of the students graduate within three years. The previous accreditation's panel recommended the programme to analyse the student success rates and detect any causes for study delay. At that time, the success rates were improving slightly. However, due to the effects of the Covid pandemic the success rates have dropped in the past few years. Based on the documentation and the interviews during the site visit, the panel concludes that feasibility does not seem to be problematic. According to the panel, the present study delay is not out of the ordinary and appears to be caused by external factors, rather than by issues regarding the feasibility of the curriculum.

Teaching staff

The courses in the programme are taught by a lecturer team of 44 (assistant, associate or full) professors and 15 PhD candidates. The programme is supported by a core team of five full professors. The panel is pleased to see the involvement of more full professors, including several top scholars in their domains, which is an improvement following a recommendation from the previous accreditation. The panel thinks the teaching staff is sufficiently qualified, and it considers the size of the teaching staff to be sufficient. To lower the

workload in courses with high student numbers, student assistants are deployed to assist the lecturers in supervising students during workshops/projects and giving feedback.

Although the majority of the (assistant, associate or full) professors hold a University Teaching Qualification (UTQ), the panel underlines the plans of the programme to further increase the proportion of lecturers who have obtained the UTQ, including the PhD candidates involved in teaching activities. The panel is positive about the university's policy regarding professionalization of teaching staff and about how new faculty lecturers are supported, e.g. through 'Start to teach', a mentoring programme for new lecturers. The panel is satisfied with the English proficiency of the teaching staff. The university has an adequate policy to ensure that all lecturers who teach in English master the English language sufficiently.

The panel commends the teaching staff for their positive and supportive attitude towards students. In the interviews, students and alumni were generally very positive about the lecturers. They indicated that, overall, lecturers are very helpful, accessible, empathetic, and quick to respond. Also, students feel heard: their feedback is taken seriously and followed up on. The panel heard several examples of feedback by students that had led to improvements in the courses and programme.

Facilities
During the site visit, the panel was given a tour around some of the lab facilities the programme offers, including the Human-Centered Computing lab, the Virtual Reality and Motion Capture lab, Lily's Prototyping lab and a lab for eye-tracking. The panel is impressed by these facilities and thinks the labs offer students ample opportunity to carry out interesting projects and learn relevant skills.

Considerations

According to the panel, the curricula of the programme's two tracks (BI and HCI) are well structured, demonstrating solid constructive alignment. The research orientation is clearly reflected in the curriculum. The panel is also positive about the honour's programme and the opportunities for entrepreneurship during the programme. The panel sees room for improvement with regard to an issue pointed out by students, concerning overlap between the content from the master's programme and the bachelor's programme of Information Science. The panel recommends exploring ways to reduce repetition for students, possibly by offering homologation courses. Academic and professional skills are well embedded in the curriculum. The panel does advise the programme to take the students' suggestion about integrating a portfolio in the curriculum into consideration, especially for the HCI track. Also, having more guest lecturers come in to share their experience in the job market may be helpful.

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During the programme, study advisors are available for students with questions and concerns about their study. Study advisors can refer to other counsellors when necessary. The panel concludes that student guidance is well set up. Also, the study progress of students is in order. Although there is study delay, this is not out of the ordinary and does not seem to be caused by issues regarding the feasibility of the programme.

According to the panel, the teaching staff is sufficiently qualified the teach the courses and supervise the research projects. The panel is pleased to see the involvement of more full professors since the previous accreditation. It commends the teaching staff for their positive and supportive attitude towards students, who in turn feel heard and taken seriously. The majority of the lecturers holds a University Teaching Qualification (UTQ). The panel underlines the plans to further increase this number. The panel is impressed by the lab facilities the programme offers, which create ample opportunity for students to carry out interesting projects and learn relevant skills.

Conclusion

The panel concludes that that the programme meets standard 2.

Standard 3. Student assessment

The programme has an adequate system of student assessment in place.

Findings

Assessment plan

Assessment in the programme is based on the faculty's assessment policy and elaborated in the assessment plan. The assessment plan contains assessment matrices demonstrating which learning outcomes are assessed in each course. Also, it includes overviews of the learning goals and test methods for each course. The panel appreciates the thorough elaboration and substantiation of assessment in the assessment plan. The panel thinks that the test methods used are appropriate. It is positive about the variety of test methods applied in the programme, including exams, (workshop) assignments, papers, (research) projects, posters, reports, literature studies and presentations. Also, each course is assessed through multiple tests, often through both group and individual assessments.

The panel notices that the programme includes a lot of group assignments/projects, which, according to the panel, is positive in light of practising skills like cooperation. The panel is pleased to see that group assessment is never the only test method in a course; it always constitutes only a part of the total grade as it is always combined with individual assessments. However, to further minimize the potential negative effects of group assessment (like free rider behaviour), the panel suggests integrating peer assessment in these assignments, allowing students to (anonymously) express their perception of each student's individual contribution to the group project. This peer assessment will allow lecturers to differentiate between grades awarded to individual students in groups assessments when appropriate.

From the documentation and the interviews during the site visit the panel learnt that, following from the assessment policy, there is an intermediate assessment in each course, usually halfway through the course. This midterm assessment can be formative in nature or the grade may count as a (small) percentage of the final overall grade for the course. The panel appreciates how formative assessment is systematically embedded in the programme. The interviews show that students are also positive about the intermediate

assessment as it provides them with formative feedback and helps them to study throughout the course and not just at the end.

The faculty-wide regulations described in the 'Master's Degree Programme Education and Examinations Regulations' include a minimal grade clause: students only have the right for a resit if their grade is a 4 at minimum. The goal of this regulation is to ensure that students are required to make an effort. In the interviews with students, lecturers and the Board of Examiners, there was some confusion over the exact cases in which this regulation applies. For example, students mentioned that the minimal grade clause had also been applied to the intermediate assessment, while the Board of Examiners indicated it should only be applied to the overall final grade. The panel advises the programme to investigate (together with students) the effect of the minimal grade clause in the programme in order to reflect on whether it serves the goals it is intended for. Also, the programme, specifically the Board of Examiners, is recommended to investigate ensuring the correct execution of the policy.

Role of student-assistants in assessment
As mentioned earlier, several courses in the programme make use of student-assistants to support the lecturer(s) in supervising students in projects and workshops. It is clear from the documentation and the interviews that these students-assistants also have a role in the grading process of projects. The grades for projects are one of the components that make up the overall grade of a course. While the lecturer is always responsible for awarding grades, the student-assistants give feedback to the students regarding the projects and may advise the lecturer about the grade, based on their observations during the project supervision. The programme management mentioned in the interview that student-assistants are trained and work on the basis of clear rubrics and instructions by the lecturer. However, the interviews made clear that not all student-assistants attend the training. In the student chapter students mentioned that the quality of student-assistants and their feedback varies considerably and that grading criteria are not always used consistently. This is echoed in the interview with students, some of whom also work as a student-assistant themselves, who explained that there are differences between lecturers regarding the supervision and instruction of student-assistants. Some are more proactive in this than others. Students recognize that the quality of the supervision and feedback during workshops/projects may depend on the individual student-assistant. The Board of Examiners indicated in the interview that it agreed that in some cases lecturers had relied too much on the assessments of student-assistants. The panel concludes that the programme needs to pay more attention to the contribution of student-assistants to the grading process, to ensure consistency. It advises the programme to see to it that all student-assistants are properly trained and instructed by the lecturer and that they are given adequate rubrics to work with. Also, lecturers need to be proactive in supervising the student-assistants and in checking the feedback and advice given by the student-assistants during assessment.

Thesis assessment
As part of the preparation for the site visit, the panel reviewed 15 theses from the programme, including the filled-in assessment forms. Theses are always assessed by the supervisor and a second assessor. Both fill out an assessment form. The component 'process', which counts for 30% of the final grade, is assessed by the supervisor only. Both assessors attend and assess the presentation, which makes up 10% of the final grade. Following the presentation, the assessors discuss their individual assessments and come to an agreement about the overall final grade. The panel is very positive about the extensive assessment forms that contain detailed rubrics. There are clear instructions on how to evaluate theses for both the first and second supervisor. Also, the forms examined by the panel were elaborately filled in and provided rich feedback to the students.

The documentation and interviews show that a fair number of theses lead to publications in scientific venues. In the interview, students mentioned that lecturers had suggested that a thesis should be publishable for the thesis to be awarded a grade higher than an 8. Students had the impression that the publishability of the thesis is an implicit assessment criterion. The interviews with the management, teaching staff and Board of Examiners show that it is not an official criterion and is not applied as such, although some lecturers indicated they do use it as a rough guideline. The panel agrees that publishability should not be a requirement or assessment criterion for the thesis, especially since the thesis research project can also be carried out at a company, in which case the thesis will less likely be publishable. The panel advises the teaching staff to communicate to students about this more consistently.

Board of Examiners

There is one central Board of Examiners for all master's programmes in the faculty and a chamber for each (cluster) of the programmes. The chamber chairs have a seat on the central Board. The chamber responsible for the Information Science master's programme consists of a chair and two members. The chamber is responsible for monitoring and safeguarding the quality of assessment and the level of theses in the programme. In order to do this, the chamber annually reviews a sample of courses to check if the assessments and grading meet the criteria set in the assessment policy. Also, the students' evaluations of the tests are taken into account. All findings are discussed with the involved lecturer and laid down in a report. Additionally, each year one of more members of the chamber participate in an intervision group responsible for checking a sample of theses. Based on the documentation and the interviews, the panel is very positive about the Board of Examiners. The panel considers the Board of Examiners to be in control, aware of issues in the programme. Also, the Board demonstrates a clear vision on the quality of assessment. Moreover, the panel appreciates the procedure by which the chamber reviews the quality of assessment in courses and safeguards the exit level as demonstrated in the theses.

Considerations

Assessment in the programme is based on the faculty's sound assessment policy and thoroughly elaborated in the programme's assessment plan. A variety of test methods are applied in the programme and each course is assessed through multiple tests (both group and individual assessments). Formative assessment is systematically embedded in the programme, a.o. by means of an intermediate assessment in each course. Theses are always assessed by two supervisors. The panel is very positive about the detailed assessment forms for the thesis and the rich feedback provided to students.

The programme includes a lot of group work (though never as the sole test method in a course), which allows student to practice skills like cooperation. The panel suggests making use of peer assessment to gain insight into each individual student's contribution to the group result, in order to minimize the potential negative aspects of group assessment. To ensure that students are required to make an effort, the faculty applies a minimal grade clause. Although the panel agrees with this clause in principle, it does advise the programme to evaluate the effectiveness of the clause and to see to the correct implementation of the policy. Students appeared to be under the impression that the publishability of the thesis is a factor in the grading, although the programme assured it is not an assessment criterion. The panel advises the teaching staff to communicate to students about this in a more consistent way.

The programme employs student-assistants for supervision during some projects and workshops. These student-assistants also provide the students with feedback and have advisory role in the grading process for some projects within courses, while the lecturer always has final responsibility for the assessment. The panel concludes that the quality of the student-assistants varies and that grading criteria may not always be

applied consistently. The programme is advised to ensure that all student-assistants are properly trained and proactively supervised by the responsible lecturers.

The panel considers the Board of Examiners to be competent and in control. The Board succeeds at safeguarding the quality of assessment and the exit level, a.o. by means of annual reviews of samples of courses and theses.

Conclusion

The panel concludes that that the programme meets standard 3.

Standard 4. Achieved learning outcomes

The programme demonstrates that the intended learning outcomes are achieved.

Findings

Theses

The master thesis is regarded as the final student project, demonstrating the achieved level of students. The panel reviewed a sample of 15 theses from the programme. According to the panel, the level of all theses was appropriate for an academic master's programme. The panel appreciates the diversity of the topics covered in the theses and is very pleased to see that several theses led to publications in scientific venues. From the interviews, the panel learnt that there is currently no clear policy on authorship in the event of publication. The panel suggests that the programme develop a policy that clearly prescribes how to determine the positions of first and second author for both the student and the supervisor(s).

Alumni

The documentation includes overviews of the current positions and employers of alumni. It is clear from the documentation and the interviews that graduates can find a job relatively easily. The interview with alumni shows that graduates are generally content about the programme and positive about how the programme prepared them for their job in the professional field. Based on the interviews and the figures included in the documentation, the panel concludes that alumni prove to be successful in the professional field.

Considerations

Based on the sample of 15 theses reviewed, the panel concludes that the level demonstrated in the theses in appropriate for an academic master's programme. The panel appreciates the diversity of topics covered in the theses and is pleased to see that several theses have led to publications. The figures included in the documentation and the interview with alumni show that graduates are successful and well-prepared for a job in the professional field.

Conclusion

The panel concludes that that the programme meets standard 4.

General conclusion

The panel's assessment of the master's programme Information Science is positive.

Development points

1. Develop an integrated vision for the programme and tracks. As part of this, better define the prospective professional field for each track, and consequently reflect on the interpretation of the 'research orientation' in light of the professional field. Consider placing more emphasis on applying knowledge in professional settings in the learning outcomes.
2. Implement the plans to install a professional advisory board for systematic consultancy with the professional field.
3. Look for ways to reduce repetition for students from the bachelor's programme Information Science, possibly by offering homologation courses.
4. Take the students' suggestion about integrating a portfolio in the curriculum into consideration, especially for the HCI track. Also, consider having more guest lecturers come in to share their experience in the job market.
5. Explore how going abroad can be further facilitated without negatively affecting the experience and feasibility of the thesis project.
6. Develop a stronger overall didactic vision to guarantee sufficient and consistent quality of teaching across the courses.
7. In the case of group work, consider making use of peer assessment to gain insight into each individual student's contribution to the group result, in order to minimize the potential negative aspects of group assessment.
8. Evaluate the effectiveness of the minimal grade clause and see to the correct implementation of the policy.
9. Be clearer and more consistent in communicating to students that publishability is not an assessment criterion for the thesis.
10. Ensure that all student-assistants are properly trained and proactively supervised by the responsible lecturers.

Appendix 1. Intended learning outcomes

Table IS-1.1: Learning outcomes for the graduates of the degree programme in Information Science

Knowledge and understanding
1) Can use his or her knowledge of information science to make a substantial contribution to the development and/or application of scientific concepts and methods, often in a research context.
2) Is capable of understanding important recent developments in information science, and of indicating their implications for society and the research field.
3) Is capable of interpreting and using specialized literature in the field of information science.
Applying knowledge and understanding
4) Is capable of translating a problem from the area of information science or an application into a research question that is relevant to and suited for scientific development, product development or education.
5) Is capable of translating this research question into an appropriate research plan in accordance with the required scientific and methodological standards.
6) Is capable of independently performing this research with the required care and ethical responsibility and to process, interpret and evaluate the empirical data and other outcomes thus obtained in the appropriate manner.
Making judgments
7) Is capable of discussing the outcomes of empirical and theoretical research and to relate them to the scientific state-of-the-art and literature.
8) Is capable of indicating the relevance of this research to the solution of problems in the area of information science, also from the viewpoint of society wherever possible.
9) Has the capability to reflect critically on his or her own efforts as a researcher in the area of information science from the viewpoint of society.
Communication skills
10) Is capable of clearly communicating the results of research, in writing as well as orally, to an audience of specialists and laymen, in an international context.
11) Is capable of functioning effectively in a research team of possibly multi-disciplinary composition.
Learning skills
12) Has the capability to evaluate his or her own learning- and development process during the study, and if necessary to motivate and adjust himself or herself.
13) Has acquired an effective and result driven way of working that allows him or her to function independently in a competitive labor market.
14) Has the qualification to obtain a PhD position as well as a job in business and industry.

Table IS-1.2: Specific learning outcomes of master programme Business Informatics

Knowledge and understanding
1) Has theoretical and practical knowledge of advanced general subjects such as methodology of development, implementation and adoption of software products, business process management, and science-based entrepreneurship.
2) Is able with this knowledge to contribute to scientific research in these areas using an appropriate methodology.
3) Is aware of important recent developments on subjects such as methodology of development, implementation and adoption of software products, business process management, and science-based entrepreneurship.
4) Understands the relevance of these developments for his/her scientific discipline.
5) Has the skills to understand the specialized literature on at least one area in the field of: software product development methodology; business process management; implementation and adoption of systems; science-based entrepreneurship.
6) Has the skills to relate this literature to his/her own research.
7) Has insight into the integrity dilemmas that occur in the domain.
Applying knowledge and understanding
8) Is able to formulate together with the supervisor an original research question in the field of Business Informatics.
9) Is able to design, under supervision of a member of the scientific staff, a research plan that addresses a research question and that conforms to the methodological and scientific standards of the discipline.
10) Is able to carry out this research plan under the supervision of a member of the scientific staff according to the rules of good experimental practice and ethics and is able to analyze and interpret the acquired materials and/or data according to scientific standards.
11) Is able to create a plan for the implementation of an academic artifact in society and valorize the artifact.
Making judgements
12) Is able to participate critically and constructively in the scientific debate.
13) Is able to indicate the relevance of his/her research to solve problems and issues in the field of Business Informatics, both from a scientific and a societal point of view.
14) Is able to reflect critically upon his/her own research contribution and that of the student's peers from a societal point of view, including ethical perspectives such as privacy, scientific integrity and information security.
Communication
15) Has the skills to communicate research results, both in written and spoken English, to an audience of specialists or non-specialists.
16) Is able to function effectively in a possibly multidisciplinary team of experts working in the field of Business Informatics.
Learning skills
17) Has the skills to evaluate his/her own learning and development process and to adjust this process if necessary.
18) Has a result-oriented working attitude that enables him/her to work as a professional in the field of information technology.
19) Has the qualifications to enroll in a PhD programme in the field of Information Science.
20) Is qualified to acquire a position as a professional in the field of information technology.

Table IS-1.3: Specific learning outcomes of master programme Human Computer Interaction

Knowledge and understanding
1) Is capable of making an essential contribution to the development and/or application of scientific concepts and methods, predominantly in relation to research in HCI. 2) Is capable of considering recent developments within HCI (e.g., novel sensor-based interfaces) and of specifying the implications of those developments for the discipline. 3) Is capable of appropriately utilising and interpreting specialist professional literature relevant to HCI, using systematic reviews (e.g., PRISMA).
4) Understands the potential dilemmas related to ethics (scientific integrity, privacy and security) in the research field of HCI.
5) Understands the psychological aspects underlying human behaviour that are relevant to HCI.
6) Understands the computing and information science aspects underlying system behaviour that are relevant to HCI.
7) Is capable of explaining and advocating where and how human-centred design and user experience research fits within organizations, and how it needs to consider and influence organizational and business strategies.
Applying knowledge and understanding
8) Is capable of critically analysing, defining, and using a problem within the HCI domain and use this to formulate relevant appropriate research questions for either HCI educational, scientific, or engineering purposes. 9) Is capable of formulating a research design, which is appropriate for that research question and is in line with the HCI methodological and scientific standards. 10) Is capable of conducting that research with the prerequisite degree of care and ethical responsibility, and to process, analyse, interpret and evaluate empirical data or other findings obtained in the process appropriately.
11) Is capable of analysing the computing and information science aspects underlying system behaviour and apply these in HCI research and design.
12) Is capable of analysing the psychological aspects underlying human behaviour and apply these in HCI research and design.
13) Is capable of analysing possible future HCI designs and methods, critically analyse their pros and cons, conduct a requirement analysis, and suggest implementation strategies, taking the latest HCI developments in consideration.
Making judgements
14) Is capable of discussing the findings of HCI research, relating it to the state of the art and relevant literature, and participating critically and constructively in the scientific debate. 15) Is capable of specifying the relevance of such research for the resolution of questions and problems in the field of HCI, both from a research and a societal point of view. 16) Is capable of critically reflecting on their own efforts as a researcher in the field of HCI and that of others from a societal perspective, including ethical perspectives such as privacy, scientific integrity, and information security.
Communication
17) Is able to clearly communicate research findings in both written and oral form to an audience of specialists as well as people other than professional experts within an international context. 18) Is able to function effectively and creatively, as part of possibly multidisciplinary teams, lead such teams, and communicate effectively with clients, end-users and other stakeholders (e.g., engineers).
19) Is able to showcase a portfolio of industrial and research projects in which their competencies have been applied.
20) Is able to implement prototype systems that support effective and efficient communication of HCI solutions.
Learning skills
21) Has the skills to evaluate their own learning and development process, and to motivate and correct themselves during their studies where necessary. 22) Has developed their own effective, performance-oriented methodology to enable them to perform independently in the field of Interaction Technology. 23) Has the qualifications to enroll in a PhD programme in the field of Information Science. 24) Is qualified to acquire a position as a professional in the field of Information Technology. 25) Has a realistic idea of the career opportunities after graduating, and of the skills that they need to successfully start a career.

Appendix 2. Programme curriculum

Track Human Computer Interaction, start date in September:

<table>
<tr><th>HCIM</th><th>Period 1</th><th>Period 2</th><th>Period 3</th><th>Period 4</th></tr>
<tr><td rowspan="4">Year 1
(61.5 EC)</td><td>GSNS-INTRO - Introducing Natural Sciences (0.5 EC)</td><td rowspan="3">INFOMQLM
Advanced HCI qualitative research methods
(7.5 EC)</td><td colspan="2">F1-MHPSDL1 Dilemmas of the scientist (0 EC)
(preparation for FI-MHPSDL2)</td></tr>
<tr><td>INFOIHCI
Introduction to HCI (1 EC)</td><td rowspan="2">INFOMITI
Interaction technology innovation
(7.5 EC)</td><td rowspan="2">INFOMQNM
Advanced HCI quantitative research methods (7.5 EC)</td></tr>
<tr><td>INFOMCSP
Advanced cognitive and social psychology for HCI (7.5 EC)</td></tr>
<tr><td>Elective (7.5 EC)</td><td>Elective (7.5 EC)</td><td>Elective (7.5 EC)</td><td>Elective (7.5 EC)</td></tr>
<tr><td rowspan="4">Year 2
(58.5 EC)</td><td colspan="4">INFOCHCI Colloquium HCI (3 EC)</td></tr>
<tr><td colspan="2">FI-MHPSDL2 Dilemmas of the scientist workshop (0.5 EC)
(follow-up to F1-MHPSDL1)</td><td rowspan="3">INFOMHCI2
Human computer interaction
MSc thesis (25 EC)</td></tr>
<tr><td>Elective (7.5 EC)</td><td rowspan="2">INFOMHCI1
Human computer interaction project proposal (15 EC)</td></tr>
<tr><td>Elective (7.5 EC)</td></tr>
</table>

Track Human Computer Interaction, start date in February:

<table>
<tr><th>HCIM</th><th>Period 3</th><th>Period 4</th><th>Period 1</th><th>Period 2</th></tr>
<tr><td rowspan="4">Year 1
(61.5 EC)</td><td>GSNS-INTRO - Introducing Natural Sciences (0.5 EC)</td><td rowspan="3">INFOMQNM
Advanced HCI quantitative research methods (7.5 EC)</td><td colspan="2">F1-MHPSDL1 Dilemmas of the scientist (0 EC)
(preparation for FI-MHPSDL2)</td></tr>
<tr><td>INFOIHCI
Introduction to HCI (1 EC)</td><td rowspan="2">INFOMCSP
Advanced cognitive and social psychology for HCI
(7.5 EC)</td><td rowspan="2">INFOMQLM
Advanced HCI qualitative research methods
(7.5 EC)</td></tr>
<tr><td>INFOMITI
Interaction technology innovation (7.5 EC)</td></tr>
<tr><td>Elective (7.5 EC)</td><td>Elective (7.5 EC)</td><td>Elective (7.5 EC)</td><td>Elective (7.5 EC)</td></tr>
<tr><td rowspan="4">Year 2
(58.5 EC)</td><td colspan="4">INFOMCBI Colloquium Business Informatics (3 EC)</td></tr>
<tr><td colspan="2">FI-MHPSDL2 Dilemmas of the scientist workshop (0.5 EC)
(follow-up to F1-MHPSDL1)</td><td rowspan="3">INFOMHCI2
Human computer interaction
MSc thesis (25 EC)</td></tr>
<tr><td>Elective (7.5 EC)</td><td rowspan="2">INFOMHCI1
Human computer interaction project proposal (15 EC)</td></tr>
<tr><td>Elective (7.5 EC)</td></tr>
</table>

Track Business Informatics, start date in September:

<table>
<tr><th>MBIM</th><th>Period 1</th><th>Period 2</th><th>Period 3</th><th>Period 4</th></tr>
<tr><td rowspan="4">Year 1
(61.5 EC)</td><td>GSNS-INTRO - Introducing Natural Sciences (0.5 EC)</td><td rowspan="3">INFOARM
Advanced research methods
(7.5 EC)</td><td colspan="2">F1-MHPSDL1 Dilemmas of the scientist (0 EC)
(preparation for FI-MHPSDL2)</td></tr>
<tr><td>INFOSPMBI
Introduction to Business informatics (1 EC)</td><td rowspan="2">INFOMBPM
Business process management
(7.5 EC)</td><td rowspan="2">INFOME
Method engineering
(7.5 EC)</td></tr>
<tr><td>INFOMDSS
Data science and society
(7.5 EC)</td></tr>
<tr><td>Elective (7.5 EC)</td><td>Elective (7.5 EC)</td><td>Elective (7.5 EC)</td><td>Elective (7.5 EC)</td></tr>
<tr><td rowspan="4">Year 2
(58.5 EC)</td><td colspan="4">INFOMCBI Colloquium Business Informatics (3 EC)</td></tr>
<tr><td colspan="2">FI-MHPSDL2 Dilemmas of the scientist workshop (0.5 EC)
(follow-up to F1-MHPSDL1)</td><td rowspan="3">INFOMMBI2
Business informatics MSc thesis
(25 EC)</td></tr>
<tr><td>Elective (7.5 EC)</td><td rowspan="2">INFOMMBI1
Business informatics project proposal
(15 EC)</td></tr>
<tr><td>Elective (7.5 EC)</td></tr>
</table>

Track Business Informatics, start date in February:

<table>
<tr><th>MIBM</th><th>Period 3</th><th>Period 4</th><th>Period 1</th><th>Period 2</th></tr>
<tr><td rowspan="4">Year 1
(61.5 EC)</td><td>GSNS-INTRO - Introducing Natural Sciences (0.5 EC)</td><td rowspan="3">INFOME
Method engineering
(7.5 EC)</td><td colspan="2">F1-MHPSDL1 Dilemmas of the scientist (0 EC)
(preparation for FI-MHPSDL2)</td></tr>
<tr><td>INFOSPMBI
Introduction to Business informatics (1 EC)</td><td rowspan="2">INFOMDSS
Data science and society
(7.5 EC)</td><td rowspan="2">INFOARM
Advanced research methods (7.5 EC)</td></tr>
<tr><td>INFOMBPM
Business process management
(7.5 EC)</td></tr>
<tr><td>Elective (7.5 EC)</td><td>Elective (7.5 EC)</td><td>Elective (7.5 EC)</td><td>Elective (7.5 EC)</td></tr>
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(58.5 EC)</td><td colspan="4">INFOMCBI Colloquium Business Informatics (3 EC)</td></tr>
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Business informatics MSc thesis
(25 EC)</td></tr>
<tr><td>Elective (7.5 EC)</td><td rowspan="2">INFOMMBI1
Business informatics project proposal
(15 EC)</td></tr>
<tr><td>Elective (7.5 EC)</td></tr>
</table>

Appendix 3. Programme of the site visit

Schedule visitation Information Sciences – Utrecht University

Day 1: Thursday, 5 October

11.00	11.15	**Arrival and welcome**
11.15	11.45	Private panel meeting
11.45	12.30	**Interview programme management**
12.30	13.15	Lunch
13.15	14.15	**Interview students BSc + MSc**
14.15	15.15	**Lab tour**
15.15	15.30	Break
15.30	16.30	**Interview lecturers BSc + MSc**
16.30	16.45	Break
16.45	17.30	**Interview alumni**
17.30	18.00	Private panel meeting

Day 2: Friday, 6 October

09.00	09.30	**Interview Examination Board**
09.30	09.45	Break
09.45	11.45	**Thematic sessions** • Mental wellbeing of the students • Research orientation and the tension with respect to professionalization • Staff workload and increasing student applications • Visibility and definition of the information science field
11.45	12.45	Private panel meeting (incl. lunch)
12.45	13.15	**Final interview management and faculty**
13.15	14.45	Private panel meeting: preliminary conclusions, preparation of oral feedback
14.45	15.15	**Oral feedback on preliminary conclusions**

Appendix 4. Materials

Prior to the site visit, the panel studied 15 theses from the master's programme. Information on the theses is available from Academion upon request. The panel also studied other materials, which included:

- Reading guide
- Administrative data
- Organogram
- SWOT analysis
- Student chapter
- Vision on Information Science degree programme
- Information Brochures
- Presentations and video clip open day
- Education and Examination Regulations 2022-2023
- Internal certification HCIM
- MSIS 2016 Global Competency Model for Graduate Degree Programs in Information Systems
- Mapping of the programme's tracks on MSIS 2016 Framework
- Intake numbers
- Curriculum overview
- Selected course Syllabi
- UU Richtlijn Onderwijs, UU Educational Guideline
- UU Educational Model
- Staff-student ratio
- Verslaglegging kwaliteitsmiddelen Informatica 2019-2022
- Presentations from thesis information meetings
- Application form master research project
- Work placement agreement form
- Quickscan ethics and privacy regulations
- Collaborate-IT UU initiative
- Presentation Partner Event October 2022
- Interactive roadmap student support
- Introductory information new students
- Information on study advisors
- Student guidance and development
- Facilities for students studying with a disability
- Study spot availability
- Start to Teach program for new lecturers
- Guidelines teaching tasks for 5-year PhDs
- UU University Regulation UTQ STQ for Teaching Qualifications
- Supplementary UTQ and STQ procedures at the Faculty of Science
- Overview lecturers and UTQ-STQ qualifications
- Handreiking verantwoordelijkheden kwaliteit opleidingen
- Annual reports Education Committee GSNS 2017-2022
- Reports Education Advisory Committee 2018-2023
- Information on internal educational management meetings
- Evaluations oof selected courses
- Results from the National Student Survey 2017-2023

- Assessment policy GSNS
- Assessment plan MBI-HCI 22-23
- Assessment forms master thesis
- Report thesis intervision Information Science 2022
- Model regulations of the Board of Examiners 2021
- Workflow Kamer Informatica en Informatiekunde
- Annual reports Board of Examiners 2017-2022
- Assessment audits from 2017-2021
- Thesis overview
- Outflow and study success rates
- Job and employer overview
- Examples of publications with students
- Information on courses via access to the Blackboard environment