K.P. van der Mandelelaan 41a
Postbus 701, 3000 AS Rotterdam
T 010 - 201 42 43
E info@certiked-vbi.nl
www.certiked-vbi.nl

Assessment report
Limited Framework Programme Assessment

Bachelor Information Science

Utrecht University

Contents of the report

1. Executive summary

In this executive summary, the panel presents the main considerations which led to the assessment of the quality of the Bachelor Information Science programme of Utrecht University, which has been assessed according to the standards of the limited framework, as laid down in the NVAO Assessment framework for the higher education accreditation system of the Netherlands, as published on 20 December 2016 (Staatscourant nr. 69458).

The panel considers the objectives of the programme to be sound and relevant. The panel feels, however, the programme profile could be defined more precisely. The programme objectives are within the 2010 ACM/AIS Information Systems Model Curriculum and therefore match the international requirements for the information science domain. The panel appreciates the programme objectives to educate students to continue their studies at master level in this domain, but also to train students to enter the labour market.

The intended learning outcomes of the programme meet the programme objectives and are appropriate, as they address, among others, information science knowledge, academic skills, research skills, communication skills and learning skills. The panel proposes, however, to specify the disciplinary knowledge with respect to the application domains of the programme more clearly. The intended learning outcomes conform to the bachelor level, as exemplified by the Dublin descriptors.

The panel noted programme management not having relations on a structural basis with the professional field. The panel advises to put mechanisms in place to maintain regular contact with the professional field and to ensure input from this field feeding into the programme.

Although the programme is managed conscientiously, the panel recommends to strengthen the position of the programme within the Faculty of Science.

The curriculum of the programme complies with the intended learning outcomes and is regarded by the panel to be up to standard. The panel recommends to add specific information science oriented courses, as they seem to be lacking to some extent. The panel considers the Organisation & Society specialisation to match the programme character, to be coherent and to prepare well for the Master Information Science programme. The panel notes however only few lecturers with this research background being involved in the programme. The panel advises to restructure the Life Science & Health specialisation and to bring the Interaction & Games specialisation more in line with the information science character of the programme.

The panel considers the lecturers in the programme to be very motivated, the group of lecturers being coherent. The students expressed being content about the lecturers. The panel suggests, however, to involve more full professors, as the current number of only two is too limited. The panel recommends also to raise the proportion of PhDs among the staff further and to strengthen the relation between research and teaching. In addition, the panel advises to increase the proportion of UTQ-certified lecturers further. The panel feels the programme could be less dependent upon the deployment of students and PhD-students as teaching assistants.

The admission requirements and admission procedures of the programme are appropriate. The panel is positive about the procedures of the matching days. The programme exemptions policy and regulations are regarded by the panel to be up to standard.

The panel regards the study methods to meet the contents of this information science programme and to promote student-centred learning. The panel notes the programme to be quite challenging, students spending about 40 hours per week on their studies. The panel regards the number of hours of face-to-face education to be adequate and welcomes the intensive study guidance. The student-to-staff ratio could be improved. The student success rates are somewhat unfavourable. The panel advises to analyse these figures to be able to detect any causes for delay.

The panel considers the examination and assessment policies for the programme and formal position and the authority of the Board of Examiners Chamber for this programme to be appropriate.

The panel approves of the examination schedule in the courses with intermediate and final examinations and practical assignments, allowing students to be tested in a number of ways within the courses. Though the range of examination methods is appropriate, the panel proposes to limit the proportion of multiple-choice examinations, as this method is used relatively frequently. In addition, the panel advises to ensure oral communication skills to be part of the examinations in the programme.

The measures taken by programme management to ensure the validity of examinations and the reliability of assessments are adequate. This is exemplified by the assessment plan for the programme, examiners being required to be UTQ-certified and by adopting test matrices for the courses. The Board of Examiners Chamber inspects examinations. The panel advises not to have teaching assistants grade examinations.

The process design and the assessment of the Bachelor Research Project are adequate. The projects are appropriately organised. The assessments are up to standard, involving two examiners and the usage of scoring forms with relevant assessment criteria. The panel recommends to have all scoring forms filled out adequately and to require the supervisor and the second reader to grade the projects independently.

The panel assesses the course examinations to be very much up to standard. None of the Bachelor Research Projects reviewed were assessed by the panel to be unsatisfactory. The grades of these projects were found to be consistent with the grades the panel would have given. The projects have good quality. A number of these projects exhibit sound theoretical models and solid research methodology.

In the panel's opinion, the programme succeeds in preparing the programme's graduates for master programmes in this domain and for positions in the professional field.

The panel which conducted the assessment of the Bachelor Information Science programme of Utrecht University assesses this programme to meet the standards of the limited framework, as laid down in the NVAO Assessment framework for the higher education accreditation system of the Netherlands, judging the programme to be satisfactory. Therefore, the panel recommends NVAO to accredit this programme.

Rotterdam, 18 April 2018

Prof. dr. ir. M.F.W.H.A. Janssen
(panel chair)

drs. W. Vercouteren
(panel secretary)

2. Assessment process

The evaluation agency Certiked VBI received the request by Utrecht University to manage the limited framework programme assessment process for the Bachelor Information Science programme of this University. This objective of the programme assessment process was to assess whether the programme would conform to the standards of the limited framework, as laid down in the NVAO Assessment framework for the higher education accreditation system of the Netherlands, published on 20 December 2016 (Staatscourant nr. 69458).

Management of the programmes in the assessment cluster Information Sciences convened to discuss the composition of the assessment panel and to draft the list of candidates.

Having conferred with management of the Utrecht University programme, Certiked invited candidate panel members to sit on the assessment panel. The panel members agreed to do so. The panel composition was as follows:

- Prof. dr. ir. M.F.W.H.A. Janssen, full professor ICT and Governance, head of Information and Communication Technology research group, Faculty Technology, Policy and Management, Delft University of Technology (panel chair);
- Prof. dr. G. Poels, full professor Management Information Systems, director Business Informatics research unit, Department of Business Informatics and Operations Management, Ghent University (panel member);
- Prof. dr. U. Frank, full professor of Information Systems and Enterprise Modelling, Institute of Computer Science and Business Information Systems, University of Duisburg-Essen (panel member);
- E.E.M. Leo BSc, student Master Educational Sciences, University of Amsterdam, (student member).

On behalf of Certiked, drs. W. Vercouteren served as the process coordinator and secretary in the assessment process.

All panel members and the secretary confirmed in writing being impartial with regard to the programme to be assessed and observing the rules of confidentiality. Having obtained the authorisation by the University, Certiked requested the approval of NVAO of the proposed panel to conduct the assessment. NVAO have given their approval.

To prepare the assessment process, the process coordinator convened with management of the programme to discuss the outline of the self-assessment report, the subjects to be addressed in this report and the site visit schedule. In addition, the planning of the activities in preparation of the site visit were discussed. In the course of the process preparing for the site visit, programme management and the Certiked process coordinator regularly had contact to fine-tune the process. The activities prior to the site visit have been performed as planned. Programme management approved of the site visit schedule.

Well in advance of the site visit date, programme management sent the list of final projects of graduates of the programme of the most recent years. Acting on behalf of the assessment panel, the process coordinator selected 15 final projects. The grade distribution in the selection was ensured to conform to the grade distribution in the list, sent by programme management. Additional criteria have been taken into account, if these had been found to be relevant for the programme.

The panel chair and the panel members were sent the self-assessment report of the programme, including appendices. In the self-assessment report, the student chapter was included. In addition, the expert panel members were forwarded a number of final projects of the programme graduates, these final projects being part of the selection made by the process coordinator.

A number of weeks before the site visit date, the assessment panel chair and the process coordinator met to discuss the self-assessment report provided by programme management, the procedures regarding the assessment process and the site visit schedule. In this meeting, the profile of panel chairs of NVAO was discussed as well. The panel chair was informed about the competencies, listed in the profile. Documents pertaining to a number of these competencies were presented to the panel chair. The meeting between the panel chair and the process coordinator served as the briefing for panel chairs, as meant in the NVAO profile of panel chairs.

Prior to the date of the site visit, all panel members sent in their preliminary findings, based on the self-assessment report and the final projects studied, and a number of questions to be put to the programme representatives on the day of the site visit. The panel secretary summarised this information, compiling a list of questions, which served as a starting point for the discussions with the programme representatives during the site visit.

Shortly before the site visit date, the complete panel met to go over the preliminary findings concerning the quality of the programme. During this preliminary meeting, the preliminary findings of the panel members, including those about the final projects were discussed. The procedures to be adopted during the site visit, including the questions to be put to the programme representatives on the basis of the list compiled, were discussed as well.

On 8 December 2017, the panel conducted a site visit on the Utrecht University campus. The site visit schedule was in accordance with the schedule as planned. In a number of separate sessions, panel members were given the opportunity to meet with Faculty Boards representatives, programme management, Examination Board representatives, lecturers and final projects examiners and students and alumni.

In a closed session at the end of the site visit, the panel considered every one of the findings, weighed the considerations and arrived at conclusions with regard to the quality of the programme. At the end of the site visit, the panel chair presented a broad outline of the considerations and conclusions to programme representatives.

Clearly separated from the process of the programme assessment, the assessment panel members and programme representatives met to conduct the development dialogue, with the objective to discuss future developments of the programme.

Due to personal circumstances, the student member of the panel could not attend the site visit nor could she be present during the preliminary meeting of the panel. Having been informed about the absence of the student member, programme management agreed to proceed with the site visit as planned. The panel chair and the panel members also were in agreement to go on with the site visit. At the completion of the assessment process, the panel agreed this process to have been conducted in a sound way.

The assessment draft report was finalised by the secretary, having taken into account the findings and considerations of the panel. The draft report was sent to the panel members, who studied it and made a number of changes. Thereupon, the secretary edited the final report. This report was presented to programme management to be corrected for factual inaccuracies. Programme management were given two weeks to respond. Having been corrected for these factual inaccuracies, the Certiked bureau sent the report to the University Board to accompany their request for re-accreditation of this programme.

3. Programme administrative information

Name programme in CROHO:	B Information Science
Orientation, level programme:	Academic Bachelor
Grade:	BSc
Number of credits:	180 EC
Specialisations:	not applicable
Location:	Utrecht
Mode of study:	Full-time (language of instruction: Dutch)
Registration in CROHO:	56842
Name of institution:	Utrecht University
Status of institution:	Government-funded University
Institution's quality assurance:	Approved

4. Findings, considerations and assessments per standard

4.1 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
The objectives of this Bachelor programme are to enable students to structure, process and communicate information among individuals, across organisations and in society and to study the design, evaluation, deployment, usage and management of information systems. In the programme, the multidisciplinary approach is adopted and students are acquainted not only with the technological dimensions of information and information systems, but also with the human, cognitive, behavioural, societal and organisational dimensions.

In the programme, three distinct specialisations are offered. These are the specialisation *Organisation and Society*, addressing the application of information systems by groups, organisations and companies, the specialisation *Interaction & Games*, focussing on the design and usage of information systems are designed and on the interaction between humans and systems, and the specialisation *Life Science & Health*, being geared towards the study of information and information systems in the field of health and life sciences. These specialisations may be viewed as the information systems application areas of the programme. In the coming years, programme management plans to extend the *Life Science & Health* specialisation into the broader field of data science.

Programme management showed the programme objectives to meet the domain-specific framework of reference, being the international 2010 Curriculum Guidelines for Undergraduate Degree Programmes in Information Systems of ACM/AIS. Within this international reference framework, the programme is especially directed towards the study of formal methods and technical skills and less towards the study of business and management.

Programme management translated the objectives into a series of intended learning outcomes, specifying, among others, in-depth knowledge of information science, basics of scientific research, academic skills, such as analytical thinking, critical analysis and research ethics, problem solving skills, communication skills and learning skills to keep up with developing knowledge.

Programme management presented a table to show the intended learning outcomes to correspond to the Dublin descriptors for bachelor level programmes.

The programme is meant to educate students to both continue their studies at master level and to enter the labour market.

Considerations
The panel considers the objectives of the programme to be sound and relevant. The panel feels, however, the programme profile could be defined more precisely. It remains somewhat unclear to the panel what the programme exactly aims for. In the panel's view, all elements to accomplish this are available in the programme.

The programme objectives are within the 2010 ACM/AIS Information Systems Model Curriculum and therefore match the international requirements for the information science domain.

The intended learning outcomes of the programme meet the programme objectives. The intended learning outcomes are approved of by the panel, as they address, among others, information science knowledge, academic skills, research skills, communication skills and learning skills. The panel proposes, however, to specify the disciplinary knowledge with respect to the application domains of the programme more clearly.

The intended learning outcomes conform to the bachelor level, as exemplified by the Dublin descriptors.

The panel appreciates the programme objectives to educate students to continue their studies at master level in this domain, but also to train students to enter the labour market.

The panel noted programme management not having relations on a structural basis with the professional field. The panel advises to put mechanisms in place to maintain regular contact with the professional field and to ensure input from this field coming into the programme.

Assessment of this standard
These considerations have led the assessment panel to assess standard 1, Intended learning outcomes, to be satisfactory.

4.2 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
The Bachelor Information Science is a programme of the Faculty of Science of Utrecht University. Within the Faculty, the programme is part of the Undergraduate School of Sciences. The Board of Studies of the School is responsible for the quality of this and the six other Bachelor programmes. The Education Council, consisting of students and lecturers, evaluates the programme quality and advises the Board of Studies in this respect. The Board of Examiners of the Undergraduate School of Sciences has been given the authority to monitor the examination processes and the examinations and assessments of this programme. The lecturers in the programme are employed at and recruited from the Department of Information and Computing Sciences of the Faculty. The director of the programme in collaboration with the programme coordinator supervises the quality and the programme contents on a day-to-day basis.

The number of incoming students in the programme rose from about 60 students per year in the years from 2009 to 2012 to about 130 to 140 students per year in the years 2013 to 2017.

Programme management presented a table to demonstrate the curriculum meeting the intended learning outcomes of the programme. The curriculum structure of this three year Bachelor programme of 180 EC conforms to Utrecht University guidelines. This means students take major courses of 135 EC in total and 45 EC electives. Within the major of this programme, students take five mandatory courses (37.5 EC) in the first year introducing them to the information science fundamentals. In the second and third year of the major, they opt for one of the specialisations, being Organisation & Society, Interaction & Games or Life Science & Health. These specialisations include four mandatory specialisation courses, one course to be selected from a number of electives and one course to be chosen from a list of courses, addressing the academic context of the major (total of 45 EC). For the course last mentioned, students tend to choose the *Web Technology* or *Law & Informatics* courses. Students also take five supporting courses (37.5 EC), which include the *Introductory Project*, addressing academic and problem solving skills and the *Research Methods* course, in which research methods, including design science methods are addressed. Research methods are expanded on in the specialisations' courses and culminate in the *Bachelor Research Project*, an individual research project by students (15 EC). Students have 45 EC of free elective space. Most students use this elective space for taking courses from the other two specialisations. Students who do not do this, tend to choose either business courses to broaden their organisation and management knowledge and skills or computer science courses to deepen their technical knowledge and skills.

An honours programme is offered for talented students. These students take 30 EC of courses within the programme at a more challenging level and by taking extra courses, seminars, excursions and research project. Alternatively, talented students may combine the Information Science and Computer Science programmes, graduating in both programmes.

As has been indicated, nearly all staff are employed at the Department of Information and Computing Sciences, which is part of the Faculty of Science. For assistant professors and associate professors, the teaching load amounts to 60 % of their appointment and the research tasks are 40 % of their appointment. Lecturers teach for 90 % of their appointment and do some teaching-related research. The total staff amounts to 7.5 full-time equivalents, whereas another 2.9 full-time equivalents of teaching assistants are involved in the programme. About 79 % of the lecturers have PhDs and about 69 % of the lecturers are

UTQ-certified (figures calculated on the basis of teaching capacity). Two full professors are partly involved in the programme. Application domain subjects are taught either by teachers who are researcher in these domains or by guest lecturers from industry. Teachers meet four times per year to discuss the programme. Students with whom the panel met expressed being content about the teachers. They noted teachers experiencing challenging workloads.

The admission requirements for students are the secondary school diploma (vwo) and sufficient levels of mathematics in their education. Students are required to attend the so-called matching days during which they are informed about the contents and the organisation of the programme. Matching days include homework, lectures, assignments, tests and group motivation meetings. They are meant to give students a realistic impression of the programme, allowing students to take well-considered choices.

Students may apply for exemptions. Requests for exemptions are handled by the Board of Examiners.

The programme educational concept is meant to prepare students for positions as information scientists. As information scientists work task-oriented in multidisciplinary contexts, in many courses students work on tasks, assignments and projects in groups of two to six students. Study methods such as tutorials and labs allow students to work on assignments, tasks and projects and to engage in problem-based education, simulation and discussions. Lectures are offered as well. The number of hours of face-to face education are 16 hours per week in the first year, at least 12 hours per week in the second year and third year, and weekly or biweekly meetings during the Bachelor Research Project. The student-to-staff ratio is 42 : 1. From the start of the programme onwards, students are assigned a tutor. Tutors guide and counsel about fifteen students. Students may turn to the counsellors of the Undergraduate School of Science for advice and guidance. In the first year of the curriculum, students are to report at least 45 EC. If they fail, they will have to leave the programme. Students consider the programme to be feasible, studying about 40 hours per week. The student success rates are about 25 % for students completing the programme after three years and about 56 % for students finishing after four years (average figures for students registering in the second year, cohorts 2010 to 2014). Programme management attributes delays to prolonged Bachelor Research Projects and to students working alongside their studies.

Considerations
The panel considers the programme to be managed conscientiously. The panel recommends however to strengthen the position of the programme within the Faculty of Science.

The curriculum of the programme complies with the intended learning outcomes and is regarded by the panel to be up to standard. The panel recommends to add specific information science oriented courses, as they seem to be lacking to some extent. The panel considers the Organisation & Society specialisation to match the programme character, to be coherent and to prepare well for the Master Information Science programme. The panel notes however only few lecturers with this research background being involved in the programme. The panel advises to restructure the Life Science & Health specialisation and to bring the Interaction & Games specialisation more in line with the information science character of the programme.

The panel considers the lecturers in the programme to be very motivated, the group of lecturers being coherent. The students expressed being content about the lecturers. The panel suggests, however, to involve more full professors, as the current number of only two is too limited. The panel recommends also to raise the proportion of PhDs among the staff further and to strengthen the relation between research and teaching. In addition, the panel advises to increase the proportion of UTQ-certified lecturers

further. The panel feels the programme could be less dependent upon the deployment of students and PhD-students as teaching assistants.

The admission requirements and admission procedures of the programme are appropriate. The panel is positive about the procedures of the matching days. The programme exemptions policy and regulations are regarded by the panel to be up to standard.

The panel regards the study methods to meet the contents of this information science programme and to promote student-centred learning. The panel notes the programme to be quite challenging, students spending about 40 hours per week on their studies. The panel regards the number of hours of face-to-face education to be adequate and welcomes the intensive study guidance. The student-to-staff ratio could be improved. The student success rates are somewhat unfavourable. The panel advises to analyse these figures to be able to detect any causes for delay.

Assessment of this standard
These considerations have led the assessment panel to assess standard 2, Teaching-learning environment, to be satisfactory.

4.3 Standard 3: Student assessment

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

Findings
The examination and assessment regulations for the programme are in line with the Undergraduate School of Sciences Assessment Policy. For all seven Bachelor programmes of the School, one Board of Examiners has been installed, having the authority to ensure and monitor the quality of examinations and assessments and the corresponding processes of these programmes. For each of the programme including for this programme, Chambers of the Board perform a number of tasks, pertaining to individual requests and the review of examinations.

Multiple examinations are scheduled in most, if not all of the courses. Typically, students are assessed in courses by means of final examinations, intermediate examinations and practical assignments. Examination methods include written examinations with open questions and multiple-choice questions, practical assignments and written assignments. The assignments tend to be group products, whereas the written examinations are always individual examinations.

For the programme as a whole, the programme assessment plan has been drafted, relating intended learning outcomes to course learning goals and examinations. The plan is not yet complete, as course goals and examinations are not yet linked. Examiners are appointed by the Examination Board and have to be UTQ-certified. Teachers without the UTQ-certificate or teaching assistants may grade examinations, provided an examiner confirms the grade. For all courses, examinations are accompanied by test matrices, relating the examinations to the course goals. Fraud and plagiarism procedures for the programme are in place and cases are handled by the Board of Examiners Chamber for this programme. The effect of free-riding in group projects is countered by scheduling individual examinations in each of the courses. The Chamber of the Board of Examiners reviews examinations on a regular basis.

The Bachelor Research Projects are supervised by one of the programme staff members. Most projects are done by students outside of University, in organisations or companies. Programme management ensures an external supervisor of the organisation guiding the student. At the completion of the project, external supervisors submit their assessment of the student's performance, which serves as advice for the grade. Before starting the project, students are to submit their work plan. This includes the research question, methodology, planning and results to be expected. The supervisor is to approve the work plan. In the Bachelor Research Project, students are required to do research. At completion of the project, they submit their thesis. The project is assessed by the supervisor and the second reader, who has not been involved in the process. They use a set of assessment criteria, among which level achieved, problem handling, relevance and originality. No oral presentation is scheduled. The supervisor and second reader grade the project, but not independently. The Chamber of the Board of Examiners made critical remarks about the completing of the assessment forms, as some were not filled out adequately.

Considerations
The panel considers the examination and assessment policies for the programme to be adequate. The formal position and the authority of the Board of Examiners Chamber for this programme are appropriate as well.

The panel approves of the examination schedule in the courses with intermediate and final examinations and practical assignments, allowing students to be tested in a number of ways within the courses. Though

the range of examination methods is appropriate, the panel proposes to limit the proportion of multiple-choice examinations, as this method is used relatively frequently. In addition, the panel advises to ensure oral communication skills to be part of the examinations in the programme. In the current set-up, this is not ensured.

The measures taken by programme management to ensure the validity of examinations and the reliability of assessments are adequate. This is exemplified by the assessment plan for the programme, examiners being required to be UTQ-certified and by adopting test matrices for the courses. The Board of Examiners Chamber inspects examinations. The panel advises not to have teaching assistants grade examinations.

The process design and the assessment of the Bachelor Research Project are adequate. The projects are appropriately organised. The assessments are up to standard, involving two examiners and the usage of scoring forms with relevant assessment criteria. The panel recommends to have all scoring forms filled out adequately and to require the supervisor and the second reader to grade the projects independently.

Assessment of this standard
The considerations have led the assessment panel to assess standard 3, Student assessment, to be satisfactory.

4.4 Standard 4: Achieved learning outcomes

The programme demonstrates that the intended learning outcomes are achieved.

Findings
The panel studied the examinations of a number of courses of the programme.

The panel reviewed a total number of fifteen Bachelor Research Projects of graduates of the programme, these projects exhibiting a variety of grades, ranging from satisfactory to very good.

The results of the survey among alumni of the last three years show about 70 % of the graduates of the programme continuing their studies at master level. Programme graduates are admitted to the Utrecht University Master Information Science programme and programmes of other Dutch Universities. About 30 % of the graduates enter the labour market, either as employees in this domain or to be self-employed.

Considerations
Having studied the examinations of a number of courses of the programme, the panel assesses these examinations to be very much up to standard.

None of the Bachelor Research Projects reviewed were assessed by the panel to be unsatisfactory. The grades of these projects were found to be consistent with the grades the panel would have given. The projects have good quality. A number of these projects exhibit sound theoretical models and solid research methodology.

In the panel's opinion, the programme succeeds in preparing the programme's graduates for master programmes in this domain and for positions in the professional field.

Assessment of this standard
The considerations have led the assessment panel to assess standard 4, Achieved learning outcomes, to be good.

5. Overview of assessments

Standard	Assessment
Standard 1. Intended learning outcomes	Satisfactory
Standard 2: Teaching-learning environment	Satisfactory
Standard 3: Student assessment	Satisfactory
Standard 4: Achieved learning outcomes	Good
Programme	Satisfactory

6. Recommendations

In this report, a number of recommendations by the panel have been listed. For the sake of clarity, these have been brought together below. These panel recommendations are the following.

- To define the programme profile more precisely on the level of the programme objectives, specifying what the programme aims for.
- To specify the disciplinary knowledge regarding the application domains of the programme in more clear terms.
- To put mechanisms in place to maintain regular contact with the professional field and to ensure input from this field feeding into the programme.
- To strengthen the position of the programme within the Faculty of Science.
- To add specific information science oriented courses, as they seem to be lacking to some extent.
- To improve the structure of the Life Science & Health specialisation.
- To bring the Interaction & Games specialisation more in line with the information science character of the programme.
- To involve more full professors in the programme, as the current number in the programme of only two is too limited.
- To raise the proportion of PhDs among the staff further and to strengthen the relation between research and teaching in the lecturers' teaching.
- To raise the proportion of UTQ-certified lecturers further.
- To make the programme less dependent upon the deployment of students and PhD-students as teaching assistants.
- To analyse the student success rates, to detect any causes for these somewhat unfavourable figures.
- To limit the proportion of multiple-choice examinations, as this method is too frequently used.
- To ensure oral communication skills to be part of the examinations in the programme for each and every student.
- Not to have teaching assistants grade examinations.
- To have all Bachelor Research Project assessment forms filled out adequately and to have the supervisor and second reader grade the projects independently.

5. Overview of assessments

Standard	Assessment
Standard 1. Intended learning outcomes	Satisfactory
Standard 2: Teaching-learning environment	Satisfactory
Standard 3: Student assessment	Satisfactory
Standard 4: Achieved learning outcomes	Good
Programme	Satisfactory

6. Recommendations

In this report, a number of recommendations by the panel have been listed. For the sake of clarity, these have been brought together below. These panel recommendations are the following.

- To define the programme profile more precisely on the level of the programme objectives, specifying what the programme aims for.
- To be more clear on the balance of the academic research orientation and the professional orientation of the programme.
- To specify the disciplinary knowledge regarding the application domains of the programme more clearly.
- To put mechanisms in place to maintain regular contact with the professional field and to ensure input from this field feeding into the programme.
- To strengthen the position of the programme within the Faculty of Science.
- To restructure the curriculum by reducing the complexity in the design, now being founded on domains, tracks and profiles and by reorganising the electives, now being numerous.
- To add specific information science oriented courses, as they seem to be lacking to some extent.
- To involve more full professors, as the current number in the programme of only two is too limited.
- To strengthen the relation between research and teaching in the lecturers' teaching.
- To raise the proportion of UTQ-certified lecturers further.
- To make the programme less dependent upon the deployment of students and PhD-students as teaching assistants.
- To analyse the student success rates, to detect any causes for the current figures.
- Not to have teaching assistants grade examinations.
- To have all Graduation Research Project assessment forms filled out adequately and to have the supervisor and second reader grade the projects independently.