



Akkrediteringsrådet

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## Positiv institutionsakkreditering af IT-Universitetet i København

Akkrediteringsrådet har 27. september 2022 akkrediteret IT-Universitetet **positivt**, jf. akkrediteringslovens § 8<sup>1</sup>. Rådet har truffet afgørelse på grundlag af vedlagte akkrediteringsrapport fra Danmarks Akkrediteringsinstitution samt institutionens hørings svar over rapporten.

Afgørelsen er truffet ud fra en helhedsvurdering af institutionens kvalitetssikringsarbejde efter de kriterier, som fremgår af akkrediteringsbekendtgørelsen<sup>2</sup> samt udmøntningen heraf i de forventninger til kvalitetssikringsarbejdet, som er beskrevet i "Vejledning om institutionsakkreditering 2.0" fra 2019 og i Akkrediteringsrådets notat fra december 2020 om vurdering af institutionernes kvalitetssikringssystemer i anden runde af institutionsakkreditering<sup>3</sup>.

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Akkrediteringen gælder til og med 27. september 2028, jf. akkrediteringslovens § 9.

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<sup>1</sup> Lov nr. 601 af 12. juni 2013 om akkreditering af videregående uddannelsesinstitutioner (akkrediteringsloven) med senere ændringer, jf. LBK nr. 1667 af 12. august 2021

<sup>2</sup> Bekendtgørelse nr. 1558 af 2. juli 2021 om akkreditering af videregående uddannelsesinstitutioner og godkendelse af videregående uddannelser (akkrediteringsbekendtgørelsen)

<sup>3</sup> Begge ses her under punktet Vejledninger: <https://akkr.dk/akkreditering/institutionsakkreditering/>

Akkrediteringsrådet

28. september 2022

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Akkrediteringsrådet

Akkrediteringsrådet vil underrette ministeren om institutionens positive akkreditering.

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Med venlig hilsen

Peter Dahler-Larsen  
Næstforperson  
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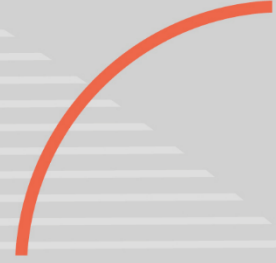


**Accreditation Report**

**IT University of  
Copenhagen (ITU)**

**Round 2**





**Accreditation Report**

IT University of Copenhagen (ITU)

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The report together with the decision  
can be downloaded from the  
Accreditation Council's website:  
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# About this Report

This accreditation report contains an analysis and assessment of the quality assurance work at the higher education institution IT University of Copenhagen (ITU).

The report assesses whether the institution has a systematic and effective quality assurance practice that in the coming accreditation period enables the institution to carry out the ongoing quality assurance and development of its provision of programmes. This forms the basis for the Accreditation Council's decision on accreditation.

The report also contains a reflection and development section with the accreditation panel's reflections on the quality assurance work they have experienced. In this section, the panel points out quality assurance areas for potential development.

## About institutional accreditation

Institutional accreditation is an assessment of how the institution's systematic quality assurance works in practice. The quality assurance work must ensure the institution's focus on continuous development of the quality and relevance of its provision of programmes and that the institution reacts when problems are identified, both when it is undergoing accreditation and in the period between accreditations.

Effective quality assurance is ongoing and systematic and lives up to the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG). The quality assurance work is based on a clear division of labour and responsibilities and anchored at management level. The institution promotes a quality culture that involves teachers and students in the quality assurance work. The quality assurance work must focus on the whole provision of programmes, the actual teaching conducted, as well as the special issues, conditions and needs relevant for the individual institution.

On this basis, the accreditation report contains an assessment of whether the institution's quality assurance work meets the requirements set for institutional accreditation in the Accreditation Act, including particularly the three criteria listed in the associated executive order. The Accreditation Institution has implemented these requirements in a number of expectations found in the Institutional Accreditation 2.0 Guidelines.

## Accreditation panel and method

In order to support assessment of the quality assurance, the Danish Accreditation Institution has set up an accreditation panel comprising a number of experts.

Among other things, members of the panel are skilled within management and quality assurance at institutional level, and they possess knowledge of the higher education sector as well as relevant labour market and student conditions.

The institution has documented the quality assurance work through an institution report and during site visits to the institution by the accreditation panel together with employees from the Accreditation Institution. On this basis, the accreditation panel has assessed the institution's quality assurance work according to the expectations in the accreditation guidelines. The accreditation panel has also discussed the institution's continued development of the quality assurance work.

Appendix 1 introduces the accreditation panel, appendix 2 describes the main steps in the accreditation process, appendix 3 contains information about the choice of audit trails, appendix 4 presents site visit programmes and appendix 5 depicts the expectations for effective quality assurance from the Institutional Accreditation 2.0 Guidelines.

The institution has documented its quality assurance work through written material and in connection with visits carried out by the accreditation panel together with employees from the Accreditation Institution to the institution.

## Decision

As an independent body, the Accreditation Council makes a decision on the accreditation of the institution. The Council decides whether the quality assurance work justifies a positive institutional accreditation, conditional positive institutional accreditation or rejection of institutional accreditation.

The first part of this report and its assessments form the basis for the decision by the Accreditation Council.





# Basis for Decision





# Recommendation and comprehensive assessment

## **The panel recommends that IT University of Copenhagen be awarded a positive institutional accreditation**

ITU has a well-founded and ongoing quality assurance practice that systematically and comprehensively addresses issues of quality and relevance and supports the continuous development of all study programmes.

The executive management, Education Group and Heads of Department make clear decisions to promote quality and relevance based on an appropriate exchange of information with the rest of the organisation. Solid programme-specific key figures for relevant quality assurance actors form the basis for ongoing monitoring of programme quality and relevance. Clear, measurable standards on dropout, study time, teaching activity, relevance and research base are presented and analysed in the Study Programme Reports and Education Portfolio Report. The Quality Policy and its three policy areas contain an appropriate and well-considered mix of quantitative and qualitative standards.

The structure of the Study Programme Reports and Educational Portfolio Report is strong and supports the identification of problems and continuous development of programmes. Quality issues documented in the reports are discussed openly in the annual quality status meetings at institutional and study programme levels, and actions are decided upon. The report structure further supports the systematic follow-up and status for actions implemented through last year's action plan.

Quality assurance work is embedded in a quality culture that engages teachers, students and management levels in dialogues about the quality and relevance of courses and study programmes. The Board of Studies and Subject Area Teams (SATs) are included in ongoing dialogues about quality and development of study programmes on a systematic basis. Students and Heads of Study Programme in SATs discuss course evaluation results and the content of Study Programme Reports. The panel notes that the role and function of the SATs are not always clear to students inside and outside the SATs.

ITU has a solid and proven concept for systematic external evaluations, which ensures that all study programmes are evaluated holistically every 4-5 years. Relevant external experts are involved, including international panel members if the study programme is taught in English. Results of the external evaluations are systematically integrated in the flow of information on quality assurance work. ITU's dialogue with the six employers' panels is well-structured and well-functioning in practice. The employers' panels provide input from potential employers and ITU graduates, which is systematically taken into consideration in developing the study programmes.



ITU systematically monitors that study programmes and courses are staffed with the desired share of active researchers employed at ITU. This is done on a biannual basis at staffing meetings with participation of each Head of Department and the associated Head of Study Programme. The VIP/DVIP ratio as defined by ITU is used to monitor the research base of key subject components, providing the basis for students' contact with the research community. In particular, the panel notes the focus on monitoring the consistent involvement of a high share of active researchers in the teaching at course level. Further, there is a policy to ensure that supervisors of students' final projects are active researchers, except in cases where an explicit exception is granted.

ITU has a systematic practice for ensuring level, content, organisation, pedagogical quality and workload. ITU has considered and prioritised work with student-centred learning through a constructive alignment approach, reflected in the strong focus on student feedback and diversity. The regular and systematic work with curriculum documents, course descriptions and mapping of learning outcomes supports students in achieving the learning objectives of their study programme.

# About ITU

This section provides a profile description of ITU. The description covers the overall organisation of ITU, the study programmes provided and the student population.

## **General description of the institution**

ITU is a state-funded, self-governing and mono-facultary higher education institution situated in the Danish capital of Copenhagen. ITU was established in 1999, formally as a part of Copenhagen Business School (CBS) but with its own Board. In 2003, ITU became an independent university. ITU initially offered MSc programmes, part-time diploma programmes and part-time Master's programmes. ITU offered its first BSc programme in 2007. The newest addition to the programme portfolio is the MSc in Data Science, which had its first admission of students in August 2021. The study programmes are offered within the four subject areas of Computer Science, Digital Design, Business IT and Games.

As of September 2021, ITU had 2,252 full-time students enrolled in its four BSc programmes and six MSc programmes, as well as 158 part-time students enrolled in its professional education programme. ITU has 456 full-time equivalent employees<sup>1</sup>.

## **Organisation**

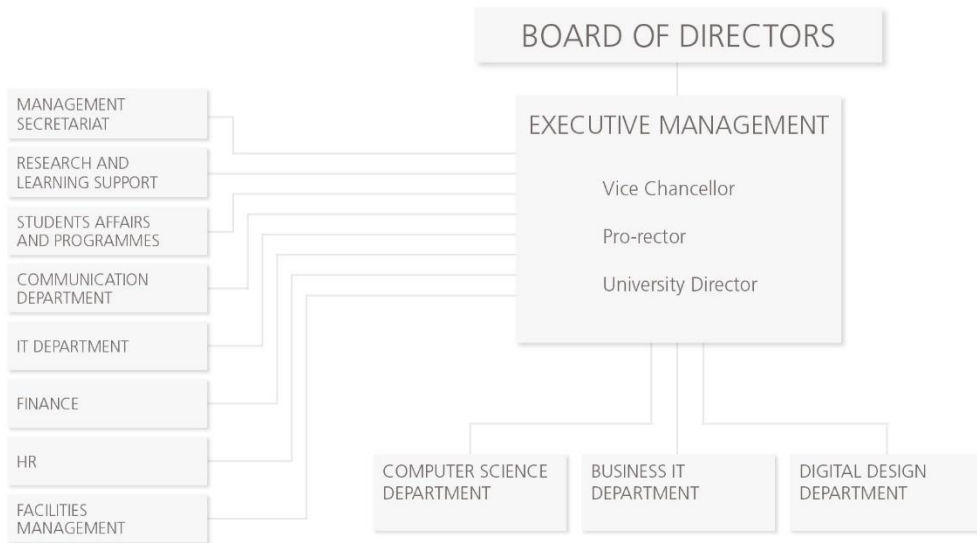
The Board of Directors is the highest authority at ITU, and responsible for the overall and strategic management of the university. The Board has nine members of which the Chair and four other members are external to the university. The day-to-day management of ITU rests with the executive management, which consists of the Vice Chancellor, the Pro-rector and the University Director. The Vice Chancellor refers to the Board of Directors, and the Board are accountable to the Minister for Higher Education and Science.

The Vice Chancellor is responsible for the general management of ITU within the framework set by the Board of Directors.

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<sup>1</sup> <https://en.itu.dk/About-ITU/Organisation/Facts-and-Figures/Key-figures>

**Figure 1. Organisation chart**



Source: [en.itu.dk/About-ITU/Organisation](http://en.itu.dk/About-ITU/Organisation).

ITU is organised with three academic departments and a number of administrative departments (figure 1). A Head of Department leads each of the academic departments. The academic departments are Business IT, Computer Science and Digital Design.

**Key figures**

The following tables (tables 1 and 2) show the different study programmes offered by ITU as well as the number of students enrolled. These numbers are also compared to similar study programmes in Denmark.

**Table 1.** Distribution of students according to study programmes at ITU

Full-time programmes		
Programme type	Study programme	Number of students
BSc	Data Science	213
	Digital Design and Interactive Technologies	153
	Global Business Informatics	244
	Software Development	487
MSc	Computer Science	196
	Digital Design and Interactive Technologies	241
	Digital Innovation and Management	279
	Software Design	292
	Games	110
	Data Science	37
	<b>Total</b>	
Professional education (part-time)		
Professional Master's	IT Management	158
	<b>Total</b>	<b>158</b>

Source: Ministry of Higher Education and Science's datavarehus (09-06-2022). Data for the Professional Master's in IT Management is from 02.09.2021.

Note: Study programmes are based on the student population per 30-09-2021, cf. datavarehuset. Professional Master's programmes specifically are based on the student population for the period 2019/2020.

**Table 2.** Number of study programmes and students. ITU and Denmark

<b>ITU</b>		
<b>Programme type</b>	<b>Number of study programmes</b>	<b>Number of students</b>
BSc	4	1,097
MSc	6	1,155
<b>Total</b>	<b>10</b>	<b>2,252</b>
<b>Denmark</b>		
BSc	68	11,964
MSc	104	8,576
<b>Total</b>	<b>172</b>	<b>20,540</b>

Source: Ministry of Higher Education and Science's datavarehus (09-06-2022).

Note: Study programmes are based on the student population per 30-09-2021, cf. datavarehuset. The table includes full-time science study programmes, since ITU solely offers study programmes within this area. The numbers for Denmark include the following universities: Aarhus University, Aalborg University, IT University of Copenhagen, University of Copenhagen, Roskilde University and University of Southern Denmark.

# Description of ITU's quality assurance system

The description of ITU's quality assurance system contained in this chapter is based on ITU's system description and self-evaluation of 27 September 2021. The Danish Accreditation Institution is responsible for selecting and prioritising between the elements in this description. The purpose is to provide the reader with an overview of quality assurance at ITU as the basis for understanding the chapters that follow. Assessments are not part of this description. The chapters about the three criteria refer to the description below.

## Quality Policy

ITU's quality assurance system includes three components: The Quality Policy, primary quality data, and cyclical processes in order to ensure regular monitoring of the Quality Policy.

The Quality Policy includes three policy areas:

- Recruitment and Admission of Students
- Teaching and Learning
- Relevance and Employability.

Each policy area includes several elements:

- Quality standards and development goals. Quality standards are set by ITU while development goals are derived from the strategic framework contract with the Ministry of Higher Education and Science
- A predicate, which is a statement of a given level of quality that the study programme must meet according to the individual quality standard or development goal (e.g. that average graduate delay must be at most 8.2 months)
- A statement on who is responsible for action if a study programme does not meet the predicate
- A statement on where breaches and plans for further analysis and/or actions are documented (e.g. in the relevant Study Programme Report)
- Alarm handling processes.

The ITU Strategy 2022-2025 includes three overarching strategic goals in order to pursue the mission of delivering internationally leading teaching and research to enable Denmark to become exceptionally good at creating value with IT: 1. Educate more IT professionals and IT researchers; 2. Engage in research and educational activities to help shape a sustainable digital future and 3. Enable all students and staff to thrive and excel together.

The Quality Policy is updated annually. ITU explains that anyone at the institution can suggest changes to the quality standards of the Quality Policy (institution report, p. 14). The Vice Chancellor is formally owner of the Quality Policy, and must approve all changes to the quality assurance system. The Board of Studies and the

Education Group can submit requests for changes to the Quality Policy to the executive management.

### **The quality organisation and the division of responsibilities**

The Board of Directors is responsible for establishing the guidelines for ITU's organisation, and are to be kept updated on changes and developments at ITU. The Vice Chancellor is ultimately responsible for the quality assurance system. Changes to the quality assurance system must be approved by the Vice Chancellor. The Vice Chancellor, Pro-rector and University Director constitute ITU's executive management.

The Dean of Education has ultimate responsibility for the quality of ITU's portfolio of study programmes. The Dean can initiate activities, strategies, and developments to improve educational quality.

Each of the three Heads of Department is responsible for one of the academic departments at ITU. They have the responsibility to ensure adequate and proper staffing of study programmes and to participate in quality assurance processes related to the quality of the research base and teaching.

Each of the 11 Heads of Study Programme have day-to-day responsibility for the quality of a study programme and for developing it. They also write the annual Study Programme Report.

ITU explains that the Education Group is a key actor in many decisions on quality-assurance-related actions, initiatives and follow-up processes. The Education Group is the top-management group for quality assurance decisions, unless an issue needs escalation to executive management level. The Education Group writes the annual Education Portfolio Report. The group consists of the Dean of Education, the Head of Student Affairs and Programmes (the study administration), the Head of Research & Learning Support and the Head of Communication Department. The Education Group meets once a week. Once every two weeks, the Education Group meets with Heads of Department.

ITU has one Board of Studies. It has the responsibility to oversee quality assurance work, discuss educational issues, approve changes to curricula, and it generally plays a role in most quality assurance processes. The Board of Studies is consulted regarding the Education Portfolio Report. Also, the Board of Studies decides the evaluation system for courses and supervision together with the Vice Chancellor.

ITU has four Subject Area Teams (SATs). SATs are department-specific or study-programme-specific bodies who are responsible for discussing and working with much the same topics as the Board of Studies, only closer to the individual study programme.

ITU explains that the organisation of quality assurance is based on the principles of subsidiarity and appropriateness, implying that decisions on actions and initiatives are taken at the lowest organisational level possible and must be fit for purpose.



SATs can decide smaller changes while the Board of Studies decides larger changes following the two principles.

The executive management decides the Quality Policy, which should be reviewed once a year. The process must involve discussion in the Education Group, supplemented by Heads of Department, followed by input from the executive management. The Board of Studies must be consulted, and finally the executive management must approve the policy (supplementary documentation 1, p. 46).

### **Main elements and mechanisms in the quality assurance system**

As mentioned above, ITU's quality assurance system includes three components:

1. The Quality Policy with decidable quality standards and development goals
2. Primary quality data, which are data that are to be measured against predicates of quality standards and development goals
3. Several linked cyclical processes, which are planned to ensure regular monitoring of quality.

The Quality Policy has already been described. This section concerns primary quality data and key cyclical processes, including the Study Programme Reports and the Education Portfolio Report. The section also presents standards and predicates in the Quality Policy.

### **Primary quality data**

Several quality standards and development goals rely on what ITU calls primary quality data. Most primary quality data are presented in ITU's data warehouse, Qlik Sense. All managers (from Heads of Study Programme and up) and other employees involved in quality assurance activities have access to the data warehouse.

Most primary quality data are calculated annually, e.g. admission numbers, dropout rates, course evaluation scores, graduate delay, the VIP/DVIP ratio, and unemployment rates. Others follow the cadence decided by the data collector, e.g. figures from the ministerial surveys (Uddannelseszoom etc.). Primary quality data on quality standards and development goals in the Quality Policy are used in the cyclical quality assurance processes, for instance in the Study Programme Reports and the Education Portfolio Report (institution report, p. 14).

### **Standards, goals and predicates**

Quality standards and development goals in the Quality Policy determine whether a study programme is in breach or not.

For each standard and goal in the Quality Policy, there is a "predicate" stating a desired level of quality. For instance, the predicate for the quality standard "Well-qualified Students (Bachelor programmes)" is the following: "No Quota 1 applicant with a grade point average below 7.0 was offered admission". Some predicates include multiple statements about the desired level of quality. For instance, the predicate for the quality standard "Dropout" is the following: "The dropout rate of BSc students is at most 20%", followed by a similar statement for MSc programmes and for ITU as a whole.

ITU states that for each quality standard and development goal, a so-called “alarm handling process” is prescribed in order to give a direction for what action(s) the responsible quality actor should take. Some alarm handling processes are mandatory while others are recommendations. ITU stresses that the proper response to a quality breach is not predefined, leaving room for contextual analysis and response.

For the quality standard “Dropout” (quality standard 2.12), the alarm handling process is, for instance, the following: “(Mandatory): Whenever a study programme breaches the standard, Student Affairs and Programmes contacts all students who dropped out of the programme and asks them why they dropped out. Student Affairs and Programmes informs the Education Group and the Head of Study Programme of the result, upon which the Education Group decides the further follow-up actions” (material with examples, p. 25). Some quality standards and development goals list more than one mandatory or recommended action in the alarm handling process.

### **Study Programme Reports**

Once a year, each Head of Study Programme must write a Study Programme Report that addresses primary quality data from the past calendar year. A template with all primary quality data and the previous year’s action plan is made available to the Head of Study Programme. Depending on whether the individual quality standard or development goal is met or not, it is marked in green or red. An overview of primary quality data from the past three years is included in the template to make it easier to spot trends and follow developments.

The report contains the following elements:

- A summative analysis of the study programme’s strengths and challenges
- A status on the action plan for the previous period
- An action plan for the quality work for the coming period
- Status of quality standards and development goals pertaining to the study programme, including descriptions of follow-up actions initiated by predicates that were not met
- Primary quality data for the study programme for the past three calendar years.

All quality standards and development goals that are not met by the relevant primary quality data must be analysed and commented on. The Head of Study Programme can use ITU’s data warehouse to investigate primary quality data in further detail.

The Head of Study Programme submits the Study Programme Report to the Education Group after consultation on the report with the relevant SAT. The discussion of the report in the SAT is intended to ensure student involvement in analysing quality assurance data and prioritising actions. When the report has been submitted, the Head of Study Programme must meet with the Education Group and the relevant Head of Department in the annual quality status meeting. At the

meeting, the report and its action plan are discussed and agreed upon. With an approved report and action plan, the Head of Study Programme can implement actions.

### **Education Portfolio Report**

Once a year, the Education Group must write an Education Portfolio Report. The Dean of Education leads the work and Heads of Department must be involved in the process. All primary quality data from the previous calendar year and the previous year's action plan are forwarded to the Education Group. The intention is to give the Education Group an overview of the primary quality data well in advance of conducting quality status meetings with Heads of Study Programme and writing their own report. The report must analyse primary quality data and other quality-assurance-relevant information at an aggregated level across study programmes and academic departments.

The report contains the following elements:

- A summary analysis of strengths, opportunities and weaknesses across ITU's study programme portfolio
- An action plan for the quality work for the coming period
- An action plan with closed actions
- Analysis of the quality standards and development goals for the present year based on primary quality data
- A tabular summary of the extent to which ITU's study programmes have met the goals and standards (red/green).

The Education Group must submit the report to the executive management. The submission includes a written statement from the Board of Studies, who should read and discuss the report before it is submitted. The Board of Studies cannot make changes to the Education Portfolio Report; the purpose of the statement is to give the Board of Studies a voice in primary quality data, including analyses, suggested actions for the coming year etc.

The executive management must meet with the Education Group for an annual portfolio quality status meeting, discussing the report's content, status on last year's action plan and agreeing on the action plan at institutional level for the coming year. The intention with the meeting is to align actions and initiatives with ITU's strategic goals and initiatives. The executive management, the Education Group and Heads of Department meet twice during the following year to follow-up on the action plan (material with examples, p. 8).

### **Other cyclical quality assurance - reports and processes**

ITU has other quality assurance reports besides the Study Programme Reports and the Education Portfolio Report. These include the Admission Memo, the biannual course and supervision evaluation reports, the biannual external examiners' reports, the annual employers' panel reports, the biennial graduate dialogue report and programme review reports (institution report, p. 16). Most of these reports are discussed in the following chapters.

ITU has six employers' panels connected to its study programmes. Five of the panels are programme-specific (Business IT, Computer Science, Digital Design, Games and part-time Master's in IT Governance), while the sixth employers' panel is tied to the executive level. ITU states that the employers' panels meet twice a year (usually January and September) and the panels as well as ITU can put items on the agenda.

External reviews of each study programme must be conducted at 4-5 years interval (institution report, p. 17). The relevant Head of Study Programme, Head of Department and the Dean of Education must give their input on topics and focus areas. The Education Group decides on the terms of reference for the expert panels.

The review panel consists of two academic experts and two members representing the employers' perspective. ITU's concept for programme reviews includes guidelines for selecting panel members (supplementary documentation 1, pp. 55-57). The panel is appointed by the Dean of Education. According to ITU's concept for programme reviews, at least one panel member must be from outside Scandinavia if the study programme is taught in English. Documentation for the reviews is mainly existing reports, analyses, data etc.

The review panel conducts a one-day site visit where it must meet with the relevant Head of Study Programme and selected teachers, students, and graduates from the programme. The panel must also meet with the relevant Head of Department and the Dean of Education. After the site visit, the panel writes a report with their impressions, insights, and recommendations for further quality development of the study programme (institution report, p. 17).

### **Board of Studies and Subject Area Teams**

The Board of Studies has five faculty and five student representatives, with the Dean of Education and the Head of Student Affairs and Programmes as assigned guests. The four Subject Area Teams are sub-groups of the Board of Studies. They include one faculty and one student member per affiliated programme. Each Subject Area Team chooses one student and one faculty member to represent the team in the Board of Studies. The fifth student and faculty member of the Board of Studies are elected directly at ITU. Faculty members in Subject Area Teams and the Board of Studies are usually Heads of Study Programme.

# Criterion I.

## Systematic and inclusive quality assurance

### Comprehensive assessment of criterion I

It is the assessment of the accreditation panel that criterion I is fully complied with.

ITU has a published quality policy. The division of responsibilities and labour in relation to central quality assurance processes is clear. There is an appropriate flow of information related to processes tied to the Study Programme Reports and the Education Portfolio Report from Heads of Study Programme to the Education Group and further on to the executive management.

It is the assessment of the accreditation panel that students, teachers, Heads of Study Programme and the executive management are engaged in dialogues that support issues being discussed openly, thereby creating an involving quality culture. The Education Group is central in many decisions on quality-assurance-related actions and initiatives. The Heads of Study Programme are important actors in assuring the quality and development of individual study programmes. The Board of Studies is a key body when it comes to overseeing and discussing educational issues. SATs have an important role in handling results of evaluations at course level on the individual programme. The panel notes that the formal tasks of the SATs are not clear to all student representatives and to students outside the SATs.

It is the assessment of the accreditation panel that the processes surrounding the quality standards and development goals of the Quality Policy effectively lead to systematic identification of breaches and thereby the need to comment on and analyse the relevant issues before deciding whether actions should be taken. The Quality Policy contains a well-considered mix of qualitative and quantitative quality standards which, taken together with the summative analysis of the Education Portfolio Report, provide solid information about the quality and relevance of each programme. Action on quality issues is stated in the Study Programme Reports and Education Portfolio Report based on a comprehensive overview of data. The structure of the reporting system supports systematic follow-up on actions initiated.

It is the assessment of the accreditation panel that ITU has a thorough concept to evaluate study programmes with external experts, and that the results of these evaluations are used systematically to develop and improve the programmes.

The accreditation panel further assesses that ITU's dialogue with the six employers' panels is well-structured and well-functioning, and that the involvement of the employers' panels leads to ongoing development of the study programmes.

## Quality assurance anchored at management level, clear division of responsibilities, and quality culture

ITU has a quality policy, which is publicly available at [www.itu.dk](http://www.itu.dk).

### **Division of responsibilities and quality culture**

The Board of Directors is responsible for establishing the guidelines for ITU's organisation. The Vice Chancellor has ultimate responsibility for, and is the owner of the Quality Policy. The Dean of Education has ultimate responsibility for the quality of ITU's portfolio of study programmes. Each of the three Heads of Department is responsible for one of the academic departments at ITU. Each of the 11 Heads of Study Programme has day-to-day responsibility for the quality of a study programme and for developing it.

ITU explains that the Education Group is a key actor in many decisions on quality-assurance-related actions, initiatives and several follow-up processes. The Education Group is the top-management group for quality-assurance-decisions unless an issue needs escalation to executive management level. The chapter "Description of ITU's quality assurance system" further elaborates on this.

ITU has one Board of Studies that has the responsibility to oversee quality assurance work, discuss educational issues, approve changes to curricula, and is generally involved in quality assurance processes. Although the accreditation panel has not seen a description regarding the cyclical processes of Board of Studies meetings, it is nonetheless clear from the minutes of meetings of the Board of Studies that quality data are discussed at regular intervals. By way of example, course evaluations from the autumn semester are discussed in February each year.

In relation to the Study Programme Report process, the division of responsibility is briefly speaking that each Head of Study Programme writes the report and that the relevant SAT is consulted on its content. In addition, the Education Group and the relevant Head of Department are involved at the annual quality status meeting. At this meeting, the report and its action plan are discussed and agreed upon.

In relation to the Education Portfolio Report process, the division of responsibilities is that the Education Group writes the report on which the Board of Studies is consulted. The report is then submitted to and discussed with the executive management at an annual portfolio quality status meeting. The chapter "Description of ITU's quality assurance system" explains this in further detail, and the section "Monitoring, standards, reporting and provision" elaborates on the issue.

The accreditation panel has taken a special interest in the interplay between the described quality assurance system and different local practices at department and study programme level. During the site visits, the panel heard several examples of

actors dealing with quality issues locally, for instance the establishment of student reference groups, and different practices for matching students' final projects with supervisors. In general, the accreditation panel sees these practices as complementary to the described quality assurance system adhering to the principle of subsidiarity. The strengths of this organisational principle are the possibility to act quickly when issues arise, and the ownership and engagement it spurs among lower level quality actors. Possible weaknesses are the potential lack of systematic sharing of best practice and insufficient follow-up on actions initiated outside the formal quality assurance system. The panel finds that in cases where a local quality issue seems to be recurrent and is detected on several study programmes, ITU could consider implementing a general reporting policy on the matter. This is further elaborated in the chapter about criterion III and in the chapter "Development and reflections".

The accreditation panel assesses that the division of responsibilities and labour in relation to the central quality assurance processes at ITU is clear. There is an appropriate flow of information related to the processes from Heads of Study Programme to the Education Group and further on to the executive management.

The panel assesses that the Education Group is central in many decisions on quality-assurance-related actions and initiatives, and that Heads of Study Programme play a key role in quality assuring and developing programmes. Further, the panel assesses that students, teachers, Heads of Study Programmes and the management are involved in dialogues that support issues being discussed.

### **Subject Area Teams (SATs) and the Board of Studies**

ITU has four SATs and one Board of Studies. SATs are responsible for discussing issues close to the individual study programmes such as results of course evaluations, while the Board of Studies covers the entire portfolio of programmes. In general, SATs can decide smaller changes, while the Board of Studies decides larger changes. For instance, a SAT can decide changes to a study programme if they do not affect the curriculum (the objectives for learning output), while suggestions for changes from a SAT must be sent to the Board of Studies for decision if they impact the curriculum (institution report, p. 11). SATs are consulted regarding the Study Programme Reports, while the Board of Studies must be consulted on the Education Portfolio Report. In this sense, there is a stated division of labour between the Board of Studies and the SATs.

The accreditation panel has been interested in learning more about the work in the SATs. The reason for this is that discussions in SATs are close to the individual study programmes, while the Board of Studies covers the entire portfolio of programmes. With regard to the role of students and faculty representatives, student members of SATs explained during the site visits that the whole SAT is generally involved in the discussions and that students are encouraged to share their insights. The representatives in SATs also confirmed that they discuss evaluation results from courses, with particular focus on evaluations below target. Another issue often discussed in SATs is student workload. Workload is elaborated on in the chapter about criterion III.

During the site visits, some student representatives raised concerns about what they perceived as insufficient onboarding of new student members to SATs. Moreover, the student representatives told the panel that the responsibilities and powers of the SATs as part of the quality assurance system can be difficult to comprehend, including how feedback on quality issues from students in SATs are passed on to and processed by the quality assurance system. The accreditation panel notes that a specific document stating the general procedures and role of SATs does not exist.

The accreditation panel notes that the executive management is aware of the issue of onboarding, and has taken initiatives to remedy it (institution report, p. 12). According to the Education Portfolio Report for 2021, new members of a SAT and the Board of Studies will be invited to participate in the last meeting of the year together with the retiring student members in order to introduce the new members to the work and ensure a smooth transition. The panel has a recommendation on the issue of onboarding in the chapter “Development and reflections”.

It is the assessment of the accreditation panel that the Board of Studies and SATs are central in involving students and teachers in ITU’s quality assurance work. In general, SATs function appropriately and give room for students to raise relevant issues. The panel assesses that the structure of the information flow between the SATs and the rest of the quality assurance organisation can be made more explicit to students inside and outside SATs. Also, the panel encourages ITU to look further into how the role and function of SATs in quality assurance could be communicated to students at ITU in an appropriate manner, and to continue its focus on improving the onboarding process of students to SATs.

### **Development of the Quality Policy**

The Quality Policy is reviewed annually. The executive management approves the changes made before the new edition of the policy is published, and the Board of Studies is involved in the process. Among developments that have taken place in recent years is a revision of the portfolio of evaluations (course and supervision) among students and graduates. The project started in 2017. The first changes were implemented in 2019 (course evaluations) and the last in the beginning of 2021 (graduate dialogue). In 2021, a few adjustments were made (to the course and supervision evaluations).. The proposal for the revision was put before the Education Group and Heads of Department before being sent to the Board of Studies and the Vice Chancellor. The changes took effect from the autumn semester 2021. Another example is that the threshold score for course and supervision evaluations was adjusted in 2021 (from 4.75 to 4.50) following a decision by the executive management and the Board of Studies (supplementary documentation 1, p. 86).

It is the assessment of the accreditation panel that the executive management and the Board of Studies work systematically on developing the quality assurance system and practice.



## Monitoring, standards, reporting and provision

The quality assurance processes cover all Bachelor's, Master's and Professional Master's programmes offered at ITU. A Study Programme Report, which includes quality data and action plans, is written for each programme at ITU.

It is the assessment of the accreditation panel that the quality assurance processes include all study programmes offered at ITU.

### **Key figures and standards**

Many of the quality standards and development goals in ITU's Quality Policy rely on what ITU calls primary quality data (key figures) (supplementary documentation 1, p. 81). Primary quality data from ITU are calculated annually, e.g. admission numbers, dropout rates, and the VIP/DVIP ratio. Other data follow the cadence decided by the data collector, e.g. figures from the ministerial surveys (Uddannelseszoom etc.). Data for a given year are presented in each Study Programme Report as well as for the previous three years for comparison. The Education Portfolio Report presents data at study programme and aggregated levels for the same period.

ITU explains that quality standards and development goals in the Quality Policy are decidable. Each standard and goal has one or more "predicates". The chapter "Description of ITU's quality assurance system" further elaborates on this. A number of mandatory or optional "alarm handling processes" are listed for each quality standard or development goal for the responsible quality actor to consult in the event of breaches. ITU gives the example that Heads of Study Programme are responsible for the quality standard concerning admission of students (quality standard 1.1). Once a year, the Head of Study Programme must write an Admission Memo that provides input for analysing the relevant standard in the Study Programme Report. If the number of students admitted is too high/low, the report template states a number of recommended actions for the Head of Study Programme to take. For instance, the Head of Study Programme can revisit red lights from a previous Study Programme Report or check the number of applicants versus admitted students to the programme. ITU explains that the responsible actor is not restrained by recommendations in the Quality Policy, but must record the chosen action(s) in the Study Programme Report.

It is the assessment of the accreditation panel that well-founded reasons form the basis for the choice of information on quality and relevance that ITU monitors. The panel also assesses that information of each individual programme as well as data at aggregated level form the basis for the quality assurance processes.

Moreover, it is the assessment of the accreditation panel that the predicates of the standards and goals in the Quality Policy effectively point to the quality breaches there might be. This leads to systematic identification of breaches and thereby the need to comment on and analyse the issues, and decide if further action should be taken.

## Study Programme Reports

The panel has been interested in learning more about how ITU has a systematic practice for analysing and taking action on quality breaches through the Study Programme Reports and Education Portfolio Report.

Each year, the Head of Study Programme writes a Study Programme Report covering one study programme. Breaches to quality standards and development goals must be commented on in the report. For instance, the Head of Study Programme commented on red lights for the number of students admitted after early dropout in the Study Programme Report 2021 for the BSc in Digital Design and Interactive Technologies. The Head of Study Programme analyses why the number is too low and suggests that the number of applicants offered admission be raised because he sees a decrease in the number of applicants accepting the offer in 2020 (audit trail 1, p. 59).

At the site visits, the accreditation panel met examples where a Head of Study Programme explained that problems had been addressed before the submission of the report, so there were only few comments on breaches in the report, which instead focused on the future actions of the action plan. An example of this is the Study Programme Report 2021 for the MSc in Digital Innovation Management, where the employment rate scores slightly below the target of the quality standard (93.2% with the target being 94.9%). In this instance, no comments are provided on the issue in the report. Instead, an action to “find ways to promote public sector as a potential domain as well as an employer” is registered in the action plan (audit trail 1, pp. 76, 82).

In general, the action plans of the Study Programme Reports contain the following elements for each action: a sequential number for each action, a statement on why the issue is addressed, a statement on who is responsible for the action, a description of the process and the completion date. For instance, the action plan of one of the Study Programme Reports analysed by the panel includes the following actions: “Securing a VIP/DVIP ratio of 75%, and long term manning for vulnerable courses”, “Collecting and analyzing data on graduates”, and “Communicating the competences developed on course level more clearly in course descriptions” (audit trail 1, p. 45). All actions are listed in a table structured by the elements mentioned above, specifying action number, why, who, process and completion date.

Each Study Programme Report also contains a status on the previous year’s action plan. The accreditation panel was interested in learning more about how actions in the action plan are completed so that follow-up on decided actions could take place. In general, while some of the decided actions are solved from one year to the next, other actions are on the action plan for several years. For instance, an action was carried over from 2019 to 2020. The 2021 report states that the status for this action is still ongoing: “We plan events where students can mingle with alumni and employers, which has not been possible during the pandemic” (audit trail 1, p. 65). This is an example of an action that has taken more than one year to complete and that is followed up through the Study Programme Report.

The quality status meeting at study programme level takes place each year based on the draft Study Programme Report. The Head of Study Programme, the Education Group, and the relevant Head of Department participate. The accreditation panel has had an opportunity to look at the notes from six different quality status meetings in 2020. The panel has seen examples of a quality status meeting resulting in an issue being put on the action plan that was not there before the meeting (supplementary documentation 1, p. 113). At the time of the quality status meeting for the BSc in Digital Design and Interactive Technologies in September 2020, the VIP/DVIP ratio was not on the action plan, despite the ratio being below standard. In the meeting, a member of the Education Group commented that the VIP/DVIP ratio should be put on the action plan. In the final version of the report, an action to secure the VIP/DVIP ratio was then added to the action plan (audit trail 1, p. 45). The accreditation panel interprets this as a case where the quality status meeting has a function to ensure that issues that do not meet the standards are detected and addressed.

### **Education Portfolio Report**

The Education Portfolio Report presents and discusses primary quality data and other quality-assurance-relevant information at an aggregated level across study programmes and academic departments. The status of quality standards and development goals for each programme is depicted in a table. Red and green colours are used depending on whether the programme is in breach or not. Furthermore, the report contains a summative analysis of ITU's study programme portfolio, an action plan, and a section with analyses of each quality standard across study programmes based on primary quality data. The report also contains a table with action points that the Education Group considers as closed and hence part of day-to-day operations.

In the summative analysis of ITU's study programme portfolio, programmes with quality challenges as well as without are mentioned, discussed and compared following the structure of the quality standards. It is indicated with green and red colour whether a quality standard is met or not, and the report comments on the red cases.

Based on the Study Programme Reports, the executive management meets with the Education Group for the annual portfolio quality status meeting (institution report, p. 16). The chapter "Description of ITU's quality assurance system" further elaborates on this.

Overall, it is the assessment of the accreditation panel that the reporting system at ITU is strong and well-organised. The structure of the Study Programme Report and Education Portfolio Report supports that decisions on actions are clear with regard to when action must be taken and who is responsible for taking action. The quality status meetings serve as suitable and effective fora for systematic discussions between the study programmes and management on planned and completed actions.

The accreditation panel assesses that ITU systematically follows up on planned actions through a review of the status on the previous year's action plan for the

Study Programme Reports and the Education Portfolio Report. Thereby, ITU gets an overview on whether decisions on actions have been implemented, and assesses the results of the effort.

## Involvement of external experts in the evaluation of the provision of programmes

External reviews of each study programme are conducted at 4-5-year intervals. The chapter “Description of ITU’s quality assurance system” further elaborates on this. As part of the material with examples, ITU has submitted several documents related to a specific programme review in 2019 (MSc in Games). In their evaluation report, the expert panel gives several recommendations for the development of the programme. One of them is that the programme should develop a vision for the whole programme and the relation between its two different tracks (material with examples, p. 96). The Study Programme Report for the MSc in Games for 2020 shows that several of the recommendations of the external expert panel have been actively implemented in the 2020 action plan, including the recommendation about developing a vision (material with examples, p. 96).

The accreditation panel finds that the concept and the provided examples suggest that the programme evaluations are relevant and of high standard. Moreover, the panel is left with the impression that ITU is responsive to suggestions from external review panels, and that the panels are kept in the loop and updated on the impact their evaluation has had on the programme. Evaluation results are included by the relevant Head of Study Programme in the annual Study Programme Report.

It is the assessment of the panel that ITU has a thorough concept regarding evaluation with external experts, and that the results of the evaluations are used to improve and develop the programmes.

## Regular assessments by the external environment of the institution

ITU uses regular assessments by the external environment in several ways. For example, reports from external examiners are, when available, used by Heads of Study Programme as input when writing Study Programme Reports.

ITU has two levels of employers’ panels: An executive-level employers’ panel and five programme-specific employers’ panels. Once a year, the programme-specific employers’ panels each write a programme-specific Employers’ Panel Report. The executive-level employers’ panel uses these reports when writing their own annual report. The reports are systematically used by a range of actors in the quality assurance system, including Heads of Study Programme, the executive-level employers’ panel, the Education Group and the Board of Directors. The programme-specific Employers’ Panel Reports are discussed in the relevant SAT and serve as input to the annual Study Programme Reports. The executive-level Employers’

Panel Report is submitted to the Board of Directors through the executive management and discussed at one of the two follow-up meetings concerning the Education Portfolio Report (materials with examples, p. 9).

During the site visits, employers' panel members confirmed that they receive a report from ITU and then discuss the report. A member told that one important role of the employers' panels is to contribute to bridging the gap between the occasionally "enclosed world" of the universities and the outside world. The members of the employers' panels expressed high engagement with their task because they can see that their input and work leads to improvements in the programmes.

The accreditation panel also noted that ITU seeks to include graduates among the members of employers' panels. Some of the employers' panel members interviewed on the site visits had graduated from ITU themselves, and saw their participation in the panel as a way of giving back to ITU.

At the site visits, members of the employers' panels said that it was fruitful to meet members of other employers' panels at ITU, but this does not happen very often. The accreditation panel agrees that meeting across employers' panels could be a helpful way to share experience and best practice.

It is the assessment of the accreditation panel that ITU's dialogue with the external environment is well-structured and well-functioning. The panel is impressed by the high quality of the input from employers' panels as well as the organisation of the two levels of employers' panels that ITU has chosen.

# Criterion II.

## Knowledge base

### Comprehensive assessment of criterion II

It is the assessment of the accreditation panel that criterion II is fully complied with.

It is the assessment of the accreditation panel that ITU systematically ensures that new and existing study programmes are research-based. The key quality assurance mechanisms to accomplish this are processes for systematic staffing of courses, principles for planning course contents, and principles related to supervision of final projects. These processes and principles are supplemented by monitoring of relevant quality standards, including the VIP/DVIP ratio. The quality standards are checked in the annual Study Programme Reports and Educational Portfolio Report and discussed at recurrent quality status meetings involving relevant management levels. Breaches of the quality standards are generally handled systematically and followed up on by relevant management levels.

It is the assessment of the accreditation panel that ITU has a systematic practice for making sure that students regularly meet active researchers in teaching and supervision. ITU has considered and set goals for how students on all study programmes come in contact with relevant parts of the research community. These goals include that at least 75% of teaching is delivered by VIPs, that final projects are supervised by active researchers from ITU, and that every mandatory course can be taught by at least two VIPs. The panel notes that the fact that the ratio also targets the number of ECTS delivered by VIPs at course level further ensures close contact between students and active researchers.

# How the provision of programmes is linked to relevant academic environments

## Set goals and priorities for the research base of programmes

ITU wants the academic content and teaching on its study programmes to meet the highest international standards and be research-based. ITU explains that a key way to meet these ambitions in terms of quality assurance is to ensure the academic standards of the teaching (material with examples, p. 17).

ITU does not operate with an overall definition of research base, but prioritises having an institution-wide fixed ratio of VIPs to DVIPs on all study programmes in order to ensure that courses and programmes are staffed with active researchers and at the same time supplemented with input from industry. With the intention of enhancing the robustness of programmes, ITU also prioritises that all faculty members (assistant, associate, and full professors) must teach and cannot be exempted from teaching. Further, to ensure continuity and flexibility, ITU monitors that all mandatory courses can be taught by at least two different VIPs at any time (table 3).

**Table 3. Quality standards for research base and student contact to research environments**

Quality standard	Predicate	Procedures
2.6. Balance between VIP and DVIP in teaching	<ul style="list-style-type: none"> <li>- For ITU as a whole, the VIP/DVIP ratio is at least 3.00.</li> <li>- Each study programme must have a VIP/DVIP ratio of at least 2.4 (80% of the ITU standard)</li> </ul>	Breaches of the standard must be commented on by the relevant Head of Study Programme in the annual Study Programme Report.
2.7. Research-based Course Design and Supervision	<ul style="list-style-type: none"> <li>- If the Course Manager is a DVIP, a VIP Course Academic Responsible (CAR) must be assigned</li> <li>- If the Course Manager is a DVIP, there must be a documented reason for this allocation</li> <li>- Every final project and thesis must be supervised by an active researcher from ITU, but for certain rare cases. Exemptions must be approved by the Dean of Education.</li> </ul>	<ul style="list-style-type: none"> <li>- Heads of Department are responsible for appointing a CAR and for ensuring that reasons for assigning part-time lecturers as Course Managers are documented.</li> <li>- Heads of Study Programme are responsible for checking that lists of supervisors whom the students can choose between contain active researchers from ITU only</li> </ul>

2.8. Research base	- Every course and part of a course which is mandatory for some students can be taught by at least two VIP.	Heads of Department maintain an updated overview of faculty/courses.
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Source: *Quality Policy 2021 (material with examples, pp. 2-34)*

The quality standards for monitoring that key subject components and study programmes are research-based are specified in the quality policy area of Teaching and Learning in the Quality Policy. A key activity is the course manning process, ensuring that relevant VIPs are allocated to each course. Further, ITU policy states that a relevant VIP is systematically designated as responsible for the content of a course. The relevant standards include the VIP/DVIP ratio, and the predicates state that Course Managers and supervisors of final projects must be VIP faculty. The quality standard concerning the balance between VIP and DVIP covers and are set equally at 75% VIP across all study programmes at ITU, with the possibility to deviate to 71% on an individual programme (quality standard 2.6).

The research base of new programmes is fleshed out in ITU's concept for development and implementation of new study programmes (supplementary documentation 1, pp. 2-8). The process is structured as a step-by-step flowchart in which considerations on research base and potential needs for new hires form part of a mandatory, internal analysis project prior to establishing new study programmes. The concept has been used twice in connection with the new study programmes of BSc in Data Science (2016) and MSc in Data Science (2019) (institution report, p. 18).

The accreditation panel assesses that ITU has set relevant goals and prioritised how new and existing study programmes should be research-based.

### **Systematic practice for the research base of courses and study programmes**

Heads of Department are responsible for the staffing of courses in cooperation with the relevant Head of Study Programme. Each Head of Department keeps a staffing sheet containing an overview of a department's study programmes and courses reaching four semesters into the future. ITU explains that the first semester of the staffing plan is the most detailed, but that the long-term view including the three following semesters provides a good overview of future needs, including where to hire new researchers (institution report, p. 25).

Among other information, the spreadsheet provides the names of teachers who are currently teaching the different courses, the teachers' individual share of ECTS points taught on the particular subject elements, and suggestions for other possible VIP teachers whose research covers topics relevant to the different courses. If a teacher is a DVIP, an argument for using that teacher must be included in the staffing sheet.

The accreditation panel has seen an example of a staffing sheet with selected courses from the Department of Business IT and recognises it as a suitable tool for planning and monitoring course staffing. The panel has taken a special interest in



the registered arguments for using DVIPs on courses, since use of DVIPs is part of several predicates in the relevant quality standards. In the staffing sheet examined by the panel, one argument for using a DVIP is provided. In this case, the reason for including the DVIP is “to bring an industry perspective and/or practical expertise to courses where it is relevant” (audit trail 2, p. 120). The panel assesses that the argument is broad, but also in line with the overall priorities for using DVIPs at ITU.

ITU explains that the staffing sheets are updated regularly and discussed in biannual staffing meetings between each Head of Department and associated Head of Study Programme (institution report, p. 26). Before the staffing meeting, Heads of Department are asked by the Course Staffing Coordinator to prepare a draft staffing sheet for the coming semester, including checking the VIP/DVIP ratio of the relevant study programmes as well as the workload and total teaching activities of the individual teacher (audit trail 2, p. 125). Furthermore, the Head of Department must coordinate with the other Heads of Department any wishes to staff own courses with teachers from other departments.

All courses at ITU are headed by a Course Manager, who must generally be a VIP. In cases where, for strategic or other reasons, Course Managers are a DVIP, the relevant Head of Department must assign a Course Academic Responsible to support the Course Manager with designing the course. The assignment of a Course Academic Responsible is systematically monitored by a standard in the Quality Policy (quality standard 2.7) and registered in the Study Programme Report. The Course Manager is responsible for keeping the course description updated and hiring possible teaching assistants to the course. According to ITU, Course Managers act as guarantors of the research base of courses (supplementary documentation 1, p. 133).

The accreditation panel has been interested in the role of Course Managers in practice and how they contribute to the research base of study programmes. During the site visits, a Course Manager explained that Course Managers often have a key role in initiating and implementing locally decided course initiatives. In one instance, a Course Manager asked the other teachers on a course to prepare small research tasks for bachelor students. In another case, a Course Manager explained how he coordinates course activities with the manager of a specific research lab before the beginning of a semester. Moreover, students and teachers explained to the panel on the site visits how the Course Manager typically functions as a link between the students and the course content, and coordinates possible groups of teaching assistants. The panel notes that Course Managers are responsible for between 25% and 50% of teaching on courses in the staffing sheet examined by the panel.

In addition to the course staffing procedures at institutional level, local practices for course manning exist. On the BSc and MSc in Digital Design and Interactive Technologies, courses are organised in five thematic clusters of VIPs doing research within relevant scientific areas (audit trail 1, p. 30). ITU explains that the cluster structure assigns responsibility for course implementation to the teachers, and this supports progression and the research base for the two study programmes. During the site visits, a Head of Department explained that the clusters hold regular

internal meetings at which they discuss content-related issues. Moreover, students on the BSc and MSc in Digital Design and Interactive Technologies are acquainted with the clusters in the beginning of and during their study programme. The panel assesses clustering as a good example of how local practices positively supplement the central level procedures at ITU. The panel encourages ITU to become even better at systematically sharing well-functioning quality assurance practices regarding course manning, such as the research clusters. The panel has a recommendation on this in the chapter “Development and reflections”.

It is the assessment of the accreditation panel that ITU has a systematic and well-functioning practice for ensuring that courses and study programmes are staffed with teachers conducting relevant research. The processes surrounding staffing sheets and biannual staffing meetings constitute appropriate mechanisms for ensuring that programmes are organised by active researchers who conduct research within the relevant fields. Local practices such as the cluster organisation complement the central quality assurance.

## Student contact with the knowledge base

### **Priorities and goals for student contact with the research environment**

It is an overall ambition of ITU that students should be in contact with and get feedback from active researchers (material with examples, p. 16). A key priority here is that at least 75% of teaching must be conducted by VIP faculty across all study programmes. This is to ensure that students meet active researchers in the classroom who are doing research that is relevant to the topics taught in the course. As mentioned above, ITU also prioritises that all faculty members must teach, and that each course can be staffed with at least two different VIPs at any time. Further, final projects must be supervised by an active researcher from ITU, except in cases where an explicit exemption has been made (quality standard 2.7).

### **Monitoring of the VIP/DVIP ratio**

ITU explains that the particular VIP/DVIP ratio used at ITU serves multiple purposes in quality assurance work. First, it is used for planning and monitoring the research base of study programmes, and courses. Second, the ratio is considered a key parameter in ensuring that students and researchers can be in close contact (institution report, p. 24). Third, the ratio is an integrated part of the budget system at ITU, distinguishing the more expensive VIPs from the less expensive DVIPs in connection with staffing and hiring processes.

ITU monitors the ratio of teaching carried out by full-time employed researchers at ITU (VIPs) to teaching carried out by external, part-time lecturers (DVIPs), making sure at least 75% of teaching at ITU level is delivered by ITU faculty (material with examples, p. 23). The target ratio is set by the executive management as the owner of the Quality Policy.

The balance between VIPs and DVIPs is monitored at three levels. At course level, the VIP/DVIP ratio is registered in the staffing sheets as the share between full-time and part-time teachers on the particular subject component. At study programme level, the ratio is calculated using an equation stated in the Quality Policy, containing also the ECTS weight and number of students on a given set of study activities. The resulting ratio is then registered in the Study Programme Report and commented on by the Head of Study Programme if it falls below the target. Finally, the ratio is calculated as an average of all study programmes at ITU and registered in the Education Portfolio Report, with local breaches of the standard being addressed in the summative analysis by the Education Group.

The accreditation panel has examined the VIP/DVIP ratio at programme and institutional levels for three consecutive years in order to assess whether the standard seems to be well-founded. In 2020, the target was met for 11 out of 11 study programmes, with an average score of 4.9 at ITU level. In 2019, the target was met for 10 out of 11 study programmes, with an average score of 5.9. In 2018, the target was met for 10 out of 11 study programmes, with an average score of 5.5. Thus, the panel notes that the actual VIP/DVIP ratio has been well above the target set for several years.

The accreditation panel assesses that ITU systematically and regularly monitors that key subject components of all study programmes are research-based. This is accomplished through the relevant quality standards in the quality policy area of Teaching and Learning. The panel notes that ITU values the specific VIP/DVIP ratio used at the institution as a useful instrument for planning, implementing and acting on quality issues regarding the research base of courses and study programmes. The panel acknowledges the ratio as a useful instrument that, in combination with the systematic procedures for staffing of the individual subject components, can contribute to ensuring that courses are taught by active researchers in the desired amount. The panel notes that ITU is aware of the possible shortcomings of using the ratio, including the well-known fact that teachers who are active researchers at other universities are always counted as DVIPs, and that the ratio in itself only provides a crude measure for how and when students are in actual contact with the research environment.

The panel assesses that the VIP/DVIP ratio is registered and, in the rare incidence of breaches, generally commented on by the Heads of Study Programme in the Study Programme Reports. The panel also notes that breaches of the VIP/DVIP ratio are discussed in the summative analysis in the Education Portfolio Report.

The accreditation panel notes that the VIP/DVIP ratio and its ensuing quality standard does not seem to be uniformly perceived across all organisational levels at ITU. During the site visits, the panel experienced different interpretations of the ratio in terms of whether the share of DVIPs (25%) should be considered as a minimum, maximum or fixed target. Further, a Head of Study Programme told the panel that the DVIP/VIP ratio is generally not a known metric outside the management group. Another Head of Study Programme was unsure if the ratio includes supervision of Master's theses or not. The panel encourages ITU to ensure that this ratio is better and uniformly understood across the quality organisation at

ITU, but notes at the same time that the standard is consistently monitored and adhered to in practice.

### **Information, action and follow-up on research base**

In addition to the formal reporting of quality standards in the Study Programme Reports, the accreditation panel has been interested in how research base as a quality assurance matter is part of the formal meeting structure at ITU. In that regard, the panel has examined notes from the annual quality status meetings between the Education Group, Head of Department and Head of Study Programme, and minutes from meetings in SATs, to find out whether the research base of courses and programmes are on the agenda. In cases where relevant issues are discussed, the panel has also been interested in whether the discussions lead to action.

In the quality status meeting for BSc in Digital Design and Interactive Technologies in 2020, the Head of Study Programme raised an issue concerning the teaching contribution of some DVIPs that did not serve the intended purpose. This gave rise to a general discussion at the meeting about the use of DVIPs and onboarding processes for DVIPs. The Head of Department suggested that the VIP/DVIP ratio for the programme was put on the action plan for 2020-21 (supplementary documentation 1, p. 113). In the action plan there is an action to secure a VIP/DVIP ratio of 75% and long-term manning for vulnerable courses, with the Head of Study Programme and Head of Department as responsible (audit trail 1, p. 45). Notes from the programme's quality status meeting in 2021 indicate that action has been taken by hiring new teachers for the courses in question (supplementary documentation 1, p. 120).

As described above, the VIP/DVIP ratio has generally been well above the target set for consecutive years at study programme as well as ITU level. The issue is noted in the Education Portfolio Report for 2021 with a recommendation from the Education Group to consider "increasing the use of external lecturers to reduce the costs and the teaching demands of researchers" (institution report, p. 124). In the same report, the Education Group points to the uneven distribution of VIP teaching resources on BSc and MSc programmes. Both of these perceived imbalances are included in the action plan for 2022, with the Education Group/Dean of Education as primarily responsible for following up. Also, in the Study Programme Report for the MSc in Games for 2020, one of the points in the action plan is to increase the percentage of DVIPs. The accreditation panel notes that there is continuous focus on ensuring that there is the right balance in teaching by faculty and use of external lecturers, based on relevant information about the research base of study programmes.

It is the assessment of the accreditation panel that the relevant management levels at ITU possess solid information about the research base of courses and supervision. The panel assesses that management takes action when quality issues concerning the research base of courses are identified and follows up on the actions taken. Moreover, the panel notes that management involvement ensures a strategic approach to the allocation of staff resources across ITU's study programmes.

ITU has seven research labs that are open to both students and academic staff. The labs provide various extracurricular activities. All labs have a faculty member with overall responsibility, and some of the labs have a lab manager and a lab teaching assistant as well to take care of the daily administration. During the site visits, the panel was presented with several examples of cases where students come in contact with research environments by participating in extracurricular activities connected to research labs.

The accreditation panel notes positively that ITU is currently in a process to develop further its policies regarding students' contact with the research environment. This is visible in the Dean of Education's new strategy for a thriving learning environment as well as a current focus point of the Education Group concerning use and support of research labs in research-based teaching at ITU (supplementary documentation 1, pp. 58-61; audit trail 1, p. 123). The panel encourages ITU to continue widening the understanding of research-based teaching and learning in the context of quality assurance. This recommendation is further elaborated in the chapter "Development and reflections".

The accreditation panel assesses that ITU has considered and set priorities for regular student contact with a relevant research environment. Moreover, the panel assesses that the research labs provide possibilities for students to be involved in research activities and discuss practices with active researchers. The accreditation panel notes that ITU is in a process of discussing how the institution can further develop its approach to ensuring that students are exposed to, and in some cases directly involved in, research in the course of their study programme.

### **Supervision of final projects**

ITU considers the principle of supervision of final projects by VIPs as an important element in ensuring research-based education and close contact between students and researchers. As a general rule, all final projects (BSc projects, MSc theses and Professional Master's final projects) must be supervised by VIP faculty. ITU explains that this priority is underpinned by the perception that students synthesise their learning from study programmes in final projects, and the fact that the projects constitute up to a quarter of a programme's ECTS points (institution report, p. 24). Consequently, ITU wants to ensure that students' final projects and the supervisors' area(s) of expertise are closely aligned.

Various practices exist as to how students are brought into contact with relevant lecturers who may serve as supervisors. On some study programmes, students are responsible for finding and contacting a potential supervisor among relevant faculty at ITU. On other study programmes, students must submit a prioritised list of up to three potential supervisors from which the Head of Study Programme and Head of Department allocate a supervisor to the project. Heads of Study Programme are responsible for checking that lists of supervisors whom the students can choose from contain active researchers from ITU only (and not DVIPs). The associated standard (quality standard 2.7) is monitored in the annual Study Programme Reports and the Education Portfolio Report. In special cases, the standard that final projects must be supervised by VIPs can be exempted from. This requires that the

Dean of Education approves the external supervisor(s) based on recommendations from the relevant Head of Study Programme. In these instances, exemptions from the quality standard are accepted and recorded in the annual Study Programme Report.

The accreditation panel has been interested in how exemptions from the quality standard of project supervision are handled systematically in the Study Programme Reports. In the 2020 Study Programme Report for the MSc in Digital Innovation and Management, four exemptions of final projects to be supervised by DVIP are recorded. In this instance, it is documented by email correspondence that the relevant Head of Department had asked the Head of Studies (now Dean of Education) for permission, and received approval to use a number of external lecturers to supervise final projects due to an exceptionally large previous enrolment to the programme. The DVIPs chosen have either taught on the programme or have specific competences that match the academic needs (material with examples, p. 48).

The accreditation panel has been presented with various local practises for preparing students to write their final projects. On the MSc in Digital Design and Interactive Technologies, a thesis preparation seminar is held twice a year, at which students getting ready to write their thesis can hear teachers pitch research projects, and they can talk to potential supervisors (audit trail 1, p. 30). On the MSc in Digital Innovation and Management, the Head of Study Programme asks all potential supervisors to write small abstracts with ideas for theses based on their own research, which are then made available to the students. On the site visits, students who were about to write their MSc thesis explained to the panel, that they generally have rich opportunities to seek out and talk to potential supervisors before submitting their priorities.

On the BSc programme in Software Development, a “Get started on your BSc project” meeting is held with students. At the meeting, students are introduced to the BSc project and how to find the right supervisor. Students are encouraged to seek a match between their topic and the supervisor’s specific research area. The Department of Computer Science, to which the BSc in Software Development belongs, maintains a list of supervisors, including their research area and links to relevant web pages etc., thus making it easy for students to get information (audit trail 1, p. 26).

The accreditation panel notes that the freedom of programmes to choose their approach in preparing students for the process of writing their final projects is in line with the principle of subsidiarity adopted at ITU. The panel encourages the institution to ensure that the practises and experience gained through the different approaches are shared and discussed across ITU at regular intervals to ensure mutual inspiration and to facilitate development of good practices.

ITU explains that students can provide feedback on their contact with the relevant research environments through the supervision evaluation questionnaire (audit trail 1, p. 21). The format of the supervision evaluation is further explained in the chapter about criterion III.

It is the assessment of the accreditation panel that the principles for matching students' final projects with relevant researchers is well-functioning in practice. The local practices for allocating supervisors support the ambition to ensure a close link between the topic of the students' final project and the research area of the supervisor.

It is the assessment of the accreditation panel that the relevant management levels at ITU possess the information necessary to act on quality issues with student contact with the research environment and that they follow up on initiatives.

# Criterion III.

## Level, content, and organisation

### Comprehensive assessment of criterion III

It is the assessment of the accreditation panel that criterion III is fully complied with.

It is the assessment of the accreditation panel that ITU works continuously and systematically to ensure the level and content of its study programmes. This is done through ongoing work on curriculum documents, course descriptions as well as mapping of intended learning outcomes and objectives for learning output. SATs and the Board of Studies are integrated in discussions of the level and content of study programmes.

The accreditation panel assesses that ITU has a systematic practice for the organisation and implementation of study programmes. Heads of Study Programme play an essential role in organisation, development and performance of study programmes owing to the principle of subsidiarity. This generally implies that quality issues are either handled locally as they occur or passed on into the quality assurance system through the Study Programme Reports.

The accreditation panel assesses that ITU has a balanced evaluation system whereby all courses and supervision of final projects are systematically evaluated. Course evaluations have a formative and a summative part, allowing for adjustments while a course is running. The panel notes that response rates and general awareness of supervision evaluations are low. The panel also notes that ITU works fittingly to improve response rates on course and supervision evaluations.

The accreditation panel assesses that ITU generally ensures an appropriate workload for students corresponding to the number of ECTS of the individual subject element. This is coordinated in biannual semester meetings of teachers on a given semester of a study programme. The panel notes that, having issues with perceived high workload of students on some study programmes, ITU could benefit from further monitoring and systematically taking action to support a balanced workload for the diverse student body.

The accreditation panel assesses that ITU works in a thorough and structured way to ensure the pedagogical and didactic quality of both VIP and DVIP teachers. ITU has prioritised working with student-centred learning through constructive alignment and student diversity in teaching and learning.



## Level and content

The Quality Policy sets the framework for ensuring the right level and content of all study programmes through the quality standard Qualification Framework and Progression (quality standard 2.5).

Curriculum documents and course descriptions form the primary tools for stating the academic content, pedagogical structure, intended learning outcomes, teaching activities and examination formats of programmes and courses. The administrative unit, Learning Support, checks and approves all new and changed course descriptions before each semester begins. This includes examining whether the intended learning outcomes, planned learning activities and examination formats are all in alignment (institution report, p. 31).

ITU maps the level and content at programme and course level systematically. At programme level, a qualification framework mapping shows the relationship between the paths of study activities through the study programme permitted by the curriculum document and the level-specific qualification framework requirements of the programme. At course level, a mapping of learning outcomes shows the relationship between the mandatory courses' intended learning outcomes and the programme's objectives for learning output. ITU explains that mapping sheets are not updated at regular intervals, but revisited and updated when changes to the study programme make it necessary (institution report, p. 33).

The accreditation panel has seen examples from several study programmes of how ITU maps learning outcomes (supplementary documentation 2). The panel considers the examined mapping sheets to be a proper instrument for ensuring that the level and content of subject elements correspond to the overall intended learning outcomes of the programme and the relevant type descriptions in the qualification framework.

Suggestions for changes to subject elements are discussed by the relevant SATs and the Board of Studies. Changes to the intended learning outcomes on a single course of a study programme can be decided by the relevant SAT as long as the suggested changes do not impact the objectives for learning output in the curriculum document. If the curriculum is affected, the SAT can suggest a change and send it to the Board of Studies for decision. Revisions to the structure of a study programme require approval by the Board of Studies and the executive management.

The accreditation panel has seen examples of discussions in the Board of Studies and SATs regarding suggestions for changes to the level and content of study programmes. By way of example, the course Digital Material and Interactive Artifacts on the BSc in Digital Design and Interactive Technologies changed place in the sequence of courses with another course based on feedback from students and teachers in order to improve progression in the programme (audit trail 1, p. 446).

The accreditation panel notes that information about re-exams is not provided in the course descriptions. During the site visits, students told the panel that they received information in due time when they had to retake exams, but concurred that it would be beneficial to have that information written in the course descriptions.

ITU explains that the extra-curricular research labs are increasingly being used to support course activities (institution report, p. 26). For example, the Ethos Lab is involved in the course Navigating Complexity on the MSc in Digital Innovation & Management, where most students use the lab to do so-called data scraping. The accreditation panel has a recommendation on the use of labs in course activities in the chapter “Development and reflections”. The research labs are elaborated in the chapter about criterion II.

The accreditation panel assesses that, in its ongoing work with curriculum documents, course descriptions and mapping at programme and course levels, ITU ensures that study programmes are described with a level and content that correspond to the programmes’ overall learning outcomes and the relevant type descriptions in the qualification framework for higher education.

## Organisation and performance

According to ITU, the Board of Studies and SATs have a central role in the quality assurance of organisation and performance. These bodies quality assure central documents and changes as described in the section “Level and Content” above and in the chapter about criterion I.

Heads of Study Programme, Course Managers and teachers assure the quality and handle issues at programme and course levels when appropriate, in line with the principle of subsidiarity. In consequence, quality issues are at times dealt with informally and in such cases not always recorded in the Study Programme Reports.

The accreditation panel acknowledges that the subsidiarity principle supports engagement and involvement at ITU, and facilitates a quality assurance system that can take care of problems as they occur. During the site visits, the panel got the impression that there is general commitment to the formal system. Teachers and Heads of Study Programme appreciate that the system leaves room for them to deal with quality issues at the level they find appropriate. For example, the panel learnt about the volunteer-based student reference groups on the MSc in Digital Innovation and Management. The Head of Study Programme set up student reference groups to get a sample of different opinions from students, take the temperature of what is happening on the programme, as well as get time to discuss programme specific issues, which, in the opinion of the Head of Study Programme, there is not always time for at SAT meetings. The panel understands the benefits of having a quality system that allows for local initiatives and is fit for purpose.

ITU is also aware of the possible weaknesses of the subsidiarity principle. During the site visits, Heads of Department explained that with the decentralised structure, it can take some time before it becomes evident whether the root of a

quality problem needs a management decision to be solved, or that the problem is more general in nature. Moreover, the accreditation panel had expected the SATs to be bodies where programme-specific issues and best practices were discussed and shared to a greater extent, than was the case. The perceived need to create reference groups can be seen in the light of this. The SATs' role and mandate within the total quality assurance system was not completely clear to the panel from the interviews with the different levels of ITU's organisation. One explanation might be that the subsidiarity principle is of such high priority to ITU that quality issues are often addressed locally and therefore not always brought up in the SATs. This discussion of local quality assurance practices is further elaborated in the chapter "Development and reflections", where the panel has a recommendation.

It is the assessment of the accreditation panel that ITU has found a suitable balance in quality assurance between central guidance and room for local action, but ITU may wish to consider how best practices can be shared systematically to a greater extent.

### **Student evaluations**

ITU conducts two kinds of student evaluations: evaluation of courses and evaluation of supervision. The evaluations cover all courses and supervision of final projects each time they run. The quality standard Student Evaluation of Courses; Projects and Final Projects in the Quality Policy (quality standard 2.1) monitors this.

The course and supervision evaluation system was fundamentally changed in 2019 and adjusted in 2021. The changes in 2019 were made to create a more streamlined evaluation process with fewer questions, and to accommodate "evaluation fatigue" among students (institution report, p. 35). After the revision, the questionnaire for course evaluation now contains four questions and the supervision evaluation questionnaire two questions. Both evaluation concepts provide students with the possibility to add free-text comments.

The course evaluations have a formative and a summative part. During the first half of a course, the Course Manager must arrange a formative evaluation. This can lead to minor changes while the course is running. During the site visits, the accreditation panel heard that teachers and students found this evaluation very helpful. Students highlighted that they could see the changes made immediately and if some changes were not possible, teachers had an opportunity to explain the reasons behind it. Teachers were generally happy with the format that allows for local adjustments and provides valuable feedback from students.

The summative evaluation takes place at the end of a course. The Head of Study Programme is responsible for commenting on the evaluation result and proposing possible actions in the Study Programme Report if a course evaluation score falls below the predicate set. Evaluation results are discussed in SATs and, at a more overall level, in the Board of Studies. Moreover, Heads of Study Programme hold semester meetings with students at the end of the semester to discuss evaluation results.

The accreditation panel has had an interest in how the SATs process course evaluations. It is clear from the documentation that SATs systematically discuss course evaluations. Often, the discussions include the issue of low response rates (audit trail 1, pp. 351, 368, 435). During the site visits, the panel learnt that the Head of Study Programme is central in suggesting actions, whereas SATs discuss and quality check the actions suggested.

Actions make it into the action plan of the Study Programme Reports if the associated quality issues need involvement of other quality actors, a longer time span to complete or investment of additional resources. In the action plan 2020-2021 for the MSc in Software Design, low evaluation scores have led to an action to monitor the evaluation score of a specific course. The follow-up on the action the next year states that “The course manager has drawn up a plan for revising the course”, since the scores have not improved (audit trail 1, pp. 94, 109). The accreditation panel finds that ITU has a systematic practice for acting and following up on course evaluation results, and that Heads of Study Programme are key actors in this process. This does not always leave a paper trail, i.e. written documentation about a given issue, but from the site visits, the panel learnt that Heads of Study Programme in general found that they could act appropriately with the information at hand.

The accreditation panel has seen examples of quality issues being escalated to a higher management level. The clearest example of action being taken and followed up on by management is the interdisciplinary MSc course, Cross-Disciplinary Teamwork, which was a mandatory course in which students collaborated in groups across four MSc programmes. In spring 2021, the course underwent a major revision because of feedback from students and teachers (audit trail 1, pp. 124,129). The revised version of the course ran in autumn 2021. During the site visits, the Dean of Education told the panel that the course had not yet found its final form after the revision, and needs to be completely rethought. While ITU is working on developing an alternative to the interdisciplinary course, the three academic departments are each responsible for ensuring interdisciplinarity in their teaching.

The evaluation of supervision is conducted after students hand in their final project. During the site visits, the accreditation panel heard from teachers and management that they are aware that response rates in this evaluation are generally very low. In addition, students who had written or were about to write their final project, told the panel that they were not aware of the existence of an evaluation of supervision. ITU writes in the institution report that they are waiting to see whether the changes to the evaluation system improve response rates for this evaluation (institution report, p. 35). The panel notes that, at the moment, it is difficult for the different quality assurance actors to take appropriate action on quality issues related to the supervision of final projects because the response rates are low.

The accreditation panel was impressed by the engagement of the teaching assistants they met during the site visits. Teaching assistants at ITU are BSc or MSc students hired for one semester to assist Course Managers in their daily work and to aid students' learning (institution report, p. 30). The panel saw that teaching

assistants play an important role as a link between students and teachers on courses. During the site visits, teaching assistants gave examples where they would detect and pass on quality issues to the relevant Course Manager. One example of this is elaborated in the section about workload below. Here, a teaching assistant on the Discrete Mathematics course discussed with the Course Manager why students were struggling with exercises they had been assigned. The panel notes that teaching assistants possess an invaluable insight into the course they teach, because they have often attended it themselves in a prior semester, and they can relate to fellow students differently than teachers. The panel recommends that ITU investigate how and whether teaching assistants can have a more systematic role in the local quality assurance practice. This is further elaborated in the chapter “Development and reflections”.

The accreditation panel assesses that ITU has a balanced evaluation system in which all courses are systematically evaluated each time they run. The accreditation panel assesses that ITU could benefit from working on further improving response rates. This would strengthen monitoring and make follow-up on quality issues easier, but the panel recognises that this is a difficult task that many higher education institutions struggle with. Furthermore, ITU has already taken several initiatives to improve response rates, such as setting time aside to answer evaluations in class, and changing the overall evaluation system. The panel assesses that, in the case of evaluation of supervision of final projects, more action is needed to improve the response rate.

## **Workload**

ITU explains that semester meetings among faculty are important in planning and adjusting the workload across courses on a programme. During the site visits, teachers told the panel that they align timing of assignments and exam formats at semester meetings. Moreover, student workload is a recurrent discussion theme in the SATs.

A tool for aligning students’ expectations about learning activities on courses is the student activity budget. A student activity budget is included in each course description, specifying how much time in percentages a typical student should spend on lectures, preparation, project work etc. (audit trail 1, p. 172). During the site visits, the panel heard from students that the activity budget gives them an idea of how learning activities are balanced, but also that they find it difficult to convert the percentages to actual hours. The accreditation panel suggests that ITU considers ways to make the activity budget more intelligible to students.

Student workload is not monitored through a quality standard in the Quality Policy and is therefore not registered in the Study Programme Reports. The accreditation panel has seen that students sometimes bring up workload in the free-text comments in course evaluations (audit trail 1, pp. 185, 191, 197). Workload is monitored in the Study Environment Assessment where it is on the action plan for 2021, because it has shown “that workload is unevenly distributed across study programmes” (audit trail 1, p. 224). The recurring Study Environment Assessment

and its action plan are explained further below in the section “Student-centred learning”.

ITU takes action on workload at different levels. Workload is discussed in the Board of Studies and the SATs. In particular, the Computer Science SAT addresses workload repeatedly (audit trail 1, pp. 378, 416, 419). On the MSc in Software Design, Course Managers and teachers have made smaller changes to accommodate what students perceive as too high workload. For example, during the site visits the accreditation panel learnt that the Course Manager of the Discrete Mathematics course had marked a level of difficulty on weekly exercises, so that students would know if an exercise was particularly hard, and that was why they were struggling. This adjustment was made because of student feedback, and implemented while the course was still running at the initiative of a teaching assistant.

From the students’ point of view, the issue of workload is not solved in its entirety by small adjustments. The accreditation panel heard from students that the experience of imbalanced workload often depends on students’ programming experience, and that students with no or little programming experience are especially struggling with high workload. The relevant Head of Department explained to the panel that the high amount of workload on the MSc in Software Design is a deliberate decision, because it is an ambitious programme. According to the Head of Department, ITU tries to be transparent about this expectation, and communicate it to the students before and after enrolment to the programme. In the 2020 Study Programme Report for the MSc in Software Design, the Head of Study Programme comments that he is concerned with the possible negative impact on dropout rates, student satisfaction and grades if the workload becomes any higher (audit trail 1, p. 92). In the 2021 Study Programme Report the following year, there is a suggestion to “provide additional help to students who struggle in the programme” (audit trail 1, p. 107) by establishing a study lab. The panel has a recommendation on this in the chapter “Development and reflections”.

The accreditation panel assesses that ITU works systematically to ensure a workload that corresponds to the prescribed specifications for the programme. The panel believes that, given the issues with high workload on some study programmes, ITU could benefit from making monitoring of workload part of the annual Study Programme Reports or course evaluations, as well as continue looking into what causes the perception of high workload.

### **Pedagogical quality**

ITU’s quality assurance of pedagogical and didactical quality is based on the quality standard Teacher Competence Development Programme in the Quality Policy (quality standard 2.11). The predicate of the standard is that all assistant professors must follow the university pedagogical programme. In addition, all new teachers must attend a one-day exam seminar and a one-day teaching seminar. This quality standard is treated in the Education Portfolio Report.

ITU highlights that “the pedagogical principles constitute the framework for – and highly influence – all competence development of teachers” (material with

examples, p. 19). The pedagogical principles at ITU address diversity, active learning, constructive alignment, intended learning outcomes, learning activities, formative feedback and summative assessment (institution report, p. 30).

Learning Support is responsible for the pedagogical development of teaching and offers pedagogical and didactic support and development to teachers. During the site visits, the accreditation panel learnt that this support is conducted through workshops, inspiration with different feedback formats or learning activities, as well as one-to-one meetings with teachers.

Teachers, VIPs and DVIPs, explained to the panel that they are assigned a pedagogical advisor when hired, and that external teachers get support from the Course Manager. The VIPs and DVIPs who the panel met felt they received adequate pedagogical and didactic support and development.

The accreditation panel assesses that ITU works systematically to ensure the pedagogical quality of teaching by VIPs and DVIPs.

### **Student-centred learning**

ITU points out that student-centred learning is integrated in the pedagogical principles at the institution. The principle of constructive alignment is particularly important, “which is a theory of teaching focused on what the student does as opposed to what the teacher does” (institution report, p. 30). The quality standard Constructive Alignment (quality standard 2.10), supports that courses are designed according to the principle by administrative approval of course descriptions.

The quality standard Diversity of Students on MSc Programmes (quality standard 2.4) shows how ITU has chosen to work with student-centred learning by focusing on how students with different educational backgrounds progress in their studies. During the site visits, the executive management told the accreditation panel that it is important to ITU to have a diverse student body, and that it is a strength that ITU has students from other backgrounds than IT.

The Study Environment Assessment is an example of how ITU quality assures the approach to student-centred learning. The action plan for the latest Study Environment Assessment has an action point related to questions on feedback that received poor to medium scores from certain programmes (audit trail 1, p. 224). The ensuing actions include competence development of teaching assistants, and continued focus on feedback among teaching staff. The first action is still ongoing, while the second has been completed.

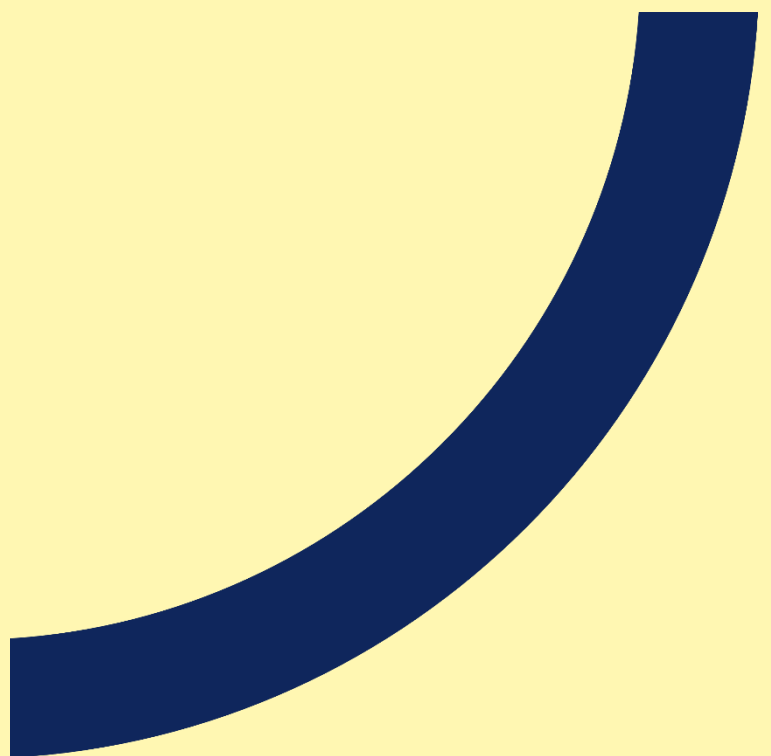
During the site visits, the accreditation panel heard examples of how ITU works with student-centred learning in practice. From teachers, the panel heard of various learning activities such as peer-grading exercises, project work and a lecture slot that has turned into a radio show. Students highlighted the support they could get in study labs, research labs and boot camps for students without programming skills.

The accreditation panel assesses that ITU has considered and prioritised work to support the selected approach to student-centred learning, and quality assures the activities this work entails. ITU's overall approach is focused on constructive alignment and student diversity in teaching and learning.





# Enhancement perspective



# Development and reflections

This part of the report contains the accreditation panel's reflections on the quality assurance work the panel has experienced at the IT University of Copenhagen (ITU). It focuses on the institution's ongoing development of quality assurance work, describes strengths of the institution's quality assurance work, and points out possible areas for development. This part is not included in the Accreditation Council's basis for decision.

## Continuous development of quality assurance work

We have seen that you develop your quality assurance work on a continuous basis. Since the first round of institutional accreditation in 2016, you have implemented several important changes to your quality assurance system. In 2018, you introduced a range of development goals for your Quality Policy, reflecting the strategic ambitions and unique characteristics of your institution. In 2019, the concept of course and supervision evaluation was revised, and adjusted again in 2021 to reach higher response rates by introducing a more streamlined evaluation concept. Recently, in 2021, a position as Dean of Education was established in order to strengthen the strategic management, quality assurance and development of your study programmes. All this, and more, testifies to us that quality work at ITU is constantly evolving.

## Strengths

Throughout the accreditation process, we have identified a number of strengths in your work to ensure the quality and development of your study programmes. In this section, we will highlight three key observations we made.

### **Quality assurance organisation**

We have seen that the subsidiarity principle is a cornerstone of your quality assurance work. It is reflected clearly in your quality assurance practice, in particular with regard to the work of Heads of Study Programme. Implementation of the principle is possible because of your decentralised approach and confidence placed in the Heads of Study Programme, teachers and students by the management levels. You take advantage of your small size and have made your organisation fit for purpose. We have seen how the decentral approach allows you to take action in time, and close to the quality issues identified.

### **Engagement of quality actors**

At the site visits, we met strong engagement about being part of ITU across organisational levels, academic departments and study programmes. Students were clearly proud of studying at ITU and happy with the many opportunities available for getting involved such as Scroll Bar, the research labs and the possibility to become a teaching assistant. Also, we were impressed with the clear commitment of Heads of Study Programme and Course Managers. It was obvious to us that

Heads of Study Programme take great responsibility and are deeply engaged with the programmes they are in charge of. We also saw several examples of how Course Managers initiate new teaching activities at course level to benefit students at ITU.

### **Employers' panels**

As the third and last observation, we would like to highlight the work of the employers' panels as well as how they fit into your quality assurance organisation. At the site visits, we talked to members of different employers' panels. All of them expressed the conviction that the input they provide is valued and leads to real and sustainable improvements of your programmes. Your employers' panels take a broad interest in your study programmes, which can be seen, for example, in their participation in discussions on the issue of student workload. We are impressed with the organisation of the two levels of employers' panels that leads to an aggregated and systematic view of your overall portfolio of study programmes. The members of the employers' panels even expressed that they found it engaging to meet members of the other panels, and you could consider whether this is meaningful to explore further.

## **Areas of development**

In the following, we highlight three areas that you can consider working on in the further development of your quality assurance practice. The presentation of each area of development is followed by a number of recommendations.

### **Subject Area Teams (SATs)**

During our site visits, we met some very committed members of SATs, experienced as well as newly elected. The SATs are a key element in your local quality assurance work, and characterised by ownership and high engagement among representatives. With one exception (SAT Games), you have chosen a structure where the representation of study programmes coincides with your three academic departments. The panel got the impression from students and Heads of Study Programme that they appreciate the space to discuss programme-specific issues as well as more general issues. You might consider if the balance between these two considerations could be accommodated in an even more systematic way.

We got the impression that a wider spectrum of quality discussions could be taken in SATs, thereby complementing the work of the Board of Studies. In continuation of this, communication about SATs' role and decision-making powers could be improved both internally in the SATs and externally to the regular students and other relevant actors at ITU. Several of the student SAT members that we interviewed expressed that they had difficulties fulfilling their role completely as representatives, because the purpose and mandate of SATs are not clear to them. We heard a wish from newly elected students in particular to be better prepared for the task through introductions to key policies, the functions of SATs, and relevant cyclic processes. We were told that there is no formal training or onboarding of new SAT members. We know that you have taken some steps in this

direction, for example by having an overlap of old and new student representatives for the last meeting of the year.

We recommend that you:

- Review whether the existing material stating the role and purpose of the SATs constitutes a sufficient basis for fully understanding the functions of the bodies
- Initiate work to develop a formalised onboarding process of newly elected student representatives to SATs. We encourage you to involve students and Heads of Study Programme in the process
- Consider developing a written description and/or graphic representation of the annual cyclic processes pertaining to the SATs.

### **Students' contact with the research environment**

During the site visits, we got the clear impression that students at ITU have a number of opportunities for engaging with the research environment by participating in relevant curricular as well as extra-curricular activities. We heard good examples of this in conversations with teaching assistants, assistants in research labs and regular students. Moreover, through the systematic practices of course manning and allocation of supervisors that you have demonstrated, we are confident that high-level staff, who are either active researchers or, in some well-determined cases, experienced teachers from industry, teach courses and supervise final projects.

We believe you could benefit from establishing a common awareness of what research-based teaching and learning means at ITU. We think that such an initiative could provide a good foundation for exchange of experience across programmes and departments, and support strategic prioritisation of activities and resources. We are therefore happy to see that you are currently in a process to develop your approach to research-based learning at ITU through the relevant “drivers” in your new strategy for a thriving learning environment.

We recommend that you:

- Continue widening your reflections and discussions on research-based teaching and learning in the context of quality assurance
- Map and broadly discuss the different curricular and extra-curricular research-informed activities at ITU with the purpose of supporting students' reflections on, and use of, relevant scientific methods. You could involve relevant key actors in the process
- Discuss and specify the goals and ambitions you have for research labs as a means of supporting students' understanding of scientific methods and approaches, including how labs are used in regular courses.

### **Quality assurance at local level**

You have a suitable and well-developed quality assurance system that fits the size and unique characteristics of your institution. You have found a good balance in quality assurance between central guidance and space for local action, where the principle of subsidiarity forms the basis of your organisation. This implies that quality actors close to the study programmes hold a lot of responsibility, in particular Heads of Study Programme and Course Managers. We see that they take on the responsibility, and that they are highly engaged in the cause. We have also noted that

teaching assistants are a highly valued resource in your course activities at local level.

We have heard you say that one potential downside of the subsidiarity principle is that it can take some time before it becomes evident that a quality issue needs a management decision to be solved, or that the problem is more general in nature. We understand the issue of student workload as a case where a broader sharing of experience across programmes could be beneficial. We have seen that workload is an ongoing concern and priority for students, teachers and Heads of Study Programme across different programmes. Students bring up workload in evaluations, and the issue has been extensively discussed in some SATs. You have taken a range of actions to address the matter. Still, it seems that the issue is recurrent. As information on student workload is not included in your Quality Policy and not monitored on a regular basis, e.g. in the Study Programme Reports, it can be difficult for you to get a comprehensive overview of the problem across study programmes. This might prolong handling of the issue.

We recommend that you:

Look further into how existing institutionalised practices for discussing local quality issues and actions across your study programmes and departments can be improved, and new practices implemented

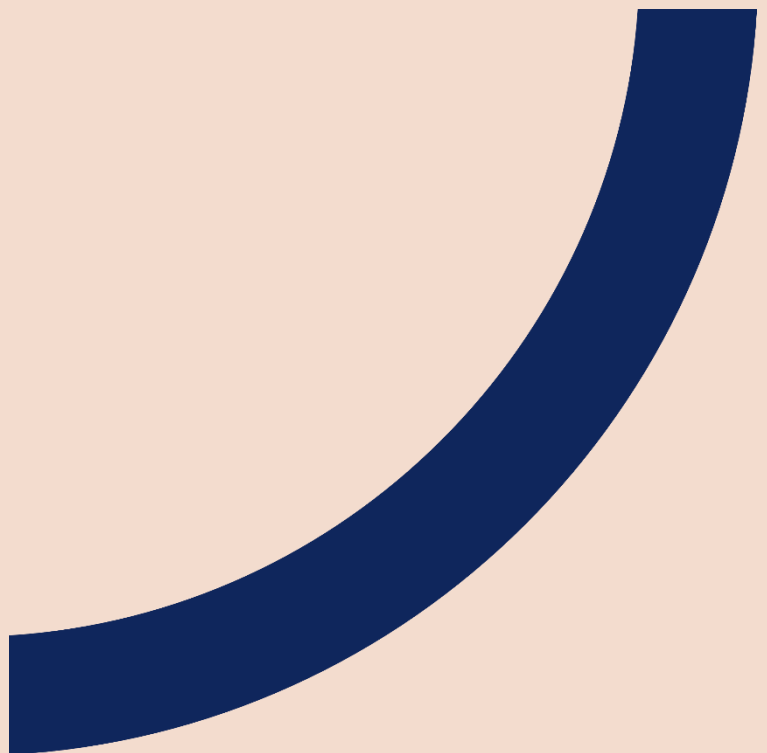
Contemplate whether and how closer integration of teaching assistants in your quality assurance work could support the opportunities for dialogue and feedback between students and teachers

Consider monitoring student workload systematically and on a regular basis, e.g. as part of the annual Study Programme Reports or course evaluations, as well as continue looking more broadly into what causes the perception of high workload

Continuously consider whether a reporting policy is needed in cases where a quality issue is handled locally, but seems to be recurrent and is detected on several study programmes.



# Appendices



# Appendix 1. Accreditation panel

The Danish Accreditation Institution has set up the accreditation panel whose function is to assess the institution's quality assurance work. The panel is comprised of a number of experts who are skilled within management and quality assurance responsibilities, have knowledge of the higher education sector and the education system, and are familiar with relevant labour market conditions and a student perspective. The accreditation panel consists of:

**Chair Yolande Berbers**, Professor at the Department of Computer Science, Faculty of Engineering Science, Katholieke Universiteit (KU) Leuven, Belgium. From 2009-2016, Yolande Berbers was Vice-Dean at the Faculty of Engineering Science at KU Leuven, with responsibility for education in general, education innovation in particular and quality assurance. From 2014-2016, she was chair of the steering committee responsible for institutional accreditation of KU Leuven by The Accreditation Organisation of the Netherlands and Flanders (NVAO). Yolande Berbers is currently president of the European Society for Engineering Education (SEFI), and is SEFI representative in the Board of the European Network on Accreditation of Engineering Education (ENAAEE). Yolande Berbers holds a PhD in Engineering: Computer Science from KU Leuven.

**Jouko Lampinen**, Professor of Computational Engineering at Aalto University, Finland. Since 2016, Jouko Lampinen has been Dean at the School of Science at Aalto University. Jouko Lampinen has several years of experience of academic leadership as the Head of Laboratory of Computational Engineering (1996-2007), and Head of Department of Biomedical Engineering and Computational Science (2008-2013) at Aalto University. From 2015-2016 he was Head of the Department of Computer Science. Furthermore, he chaired the Karvi expert group for higher education in technology in Finland from 2015-2018. Jouko Lampinen holds a PhD in Information Technology from Lappeenranta University of Technology.

**Lars Lundberg**, Professor at the Faculty of Computing at Blekinge Institute of Technology (BTH), Sweden. Since 2019, Lars Lundberg has been Dean of the Faculty of Computing at BTH. From 2014-2018, he was Head of the Department for Computer Science and Engineering at BTH. Lars Lundberg has participated in several assignments as an evaluator, both nationally and internationally, including chairing evaluation boards for the quality assurance of The Royal Institute of Art and the Royal College of Music in Stockholm. Lars Lundberg holds a PhD in Computer Engineering from Lund University.

**Staffan Björk**, Professor at the department of Computer Science and Engineering at Chalmers and Gothenburg University, Sweden. He has a PhD in Informatics from Gothenburg University and conducts research within the areas of gameplay design, pervasive games, and interaction design. At the Department of Computer Science and Engineering, he has been head of the Interaction Design division 2007-2011 (and acting head 2018) as well as vice head of department for education at undergraduate and advanced levels 2019-2020.

**Nina Maj Fjordvald**, Vice President, Marketing and Communication at EG since 2019. From 2017-2019, Nina was Marketing Leader at IBM and responsible for the marketing strategy for specific IT solutions in Europe. Prior to that, in 2015-2016, she was Global Marketing Manager at Vestas Wind Systems A/S, working with marketing strategy across different global regions. Nina Maj Fjordvald is a member of the steering group for female leaders in IT at IT-Branchen. She has an HD in IT and Management Accounting from Copenhagen Business School and an MBA from Warwick Business School.

**Tobias Munch**, MSc student in Business Administration and Information Systems - Digitalisation at Copenhagen Business School (CBS). From February 2020 to January 2022, Tobias Munch served as student member of the Board of Directors of CBS. From 2015-2017, he served as Vice-Chairman of the IT Business Study Board at CBS. Amongst various extracurricular activities, he was previously a member of the Kopernikus Steering Group, overseeing the implementation of a new Student Information System at CBS. Tobias Munch has a BA in Information Management from CBS.

The Danish Accreditation Institution is responsible for the accreditation method. The accreditation team consists of:

- Project owner: Steffen Westergård Andersen, Director of Operations, Head of Division, Danish Accreditation Institution
- Project manager: Thomas Clausen, Special Advisor
- Dea Busk Larsen, Accreditation Consultant
- Lars Pedersen, Senior Advisor
- Beate Bill, Project Worker



## Appendix 2. Accreditation process

The institutional accreditation of ITU has been carried out as follows:

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17 March 2021	Startup meeting between representatives from ITU and the Accreditation Institution
7 May 2021	Introductory meeting between representatives from ITU's management, quality administration and the Accreditation Institution
18 June 2021	Material with examples received
26 August 2021	Technical guidance meeting between representatives from ITU and the Accreditation Institution
27 September 2021	Institution report received
13 October 2021	Meeting with technicians about system description between representatives from ITU and the Accreditation Institution
13 October 2021	Supplementary documentation received - Concept for Development and Implementation of New Study Programmes at the IT University of Copenhagen
5 November 2021	Supplementary documentation received - Education Portfolio Report 2020; Concept for Programme Reviews; mapping of learning outcomes
25 November 2021	receivedSupplementary documentation received - An attractive and inclusive learning environment [ITU strategy for a thriving learning environment]; Student-centred research-based education at ITU [Power Point Presentation from AI seminar about research-based education 20 September 2021]
24 January 2022	Supplementary documentation received – Quality Policy 2022
15 March 2022	Supplementary documentation received - The Dean of Education's ("Uddannelseschef") areas of responsibility; Terms of Reference – Education Group; Section 15 Study Board (email text)
24 March 2022	Supplementary documentation received – Notes from Quality Status Meetings 2020: BSc Digital Design and Interactive Technologies, MSc Digital Innovation and

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	Management, MSc Software Design, BSc DDIT, MSc DIM, MSc Software Design; Course Managers' Responsibilities; mapping of learning outcomes: BSc SWU, MSc DDIT.
23-24 November 2021	First site visit to ITU (see agenda in appendix 4)
28 January 2022	Audit trail material received (see appendix 3 for audit trail descriptions)
8-10 March 2022	Second site visit to ITU (see agenda in appendix 4)
20 June 2022	Hearing of report
4 July 2022	Hearing response from the institution received
Changes in the recommendation or assessment of criteria after hearing?	No changes in the recommendation or assessment of criteria after hearing
27 September 2022	Decision made by the Accreditation Council

For a more thorough description of the steps in the accreditation process see the *Institutional Accreditation 2.0 Guidelines*, which is available on the Danish Accreditation Institution's website: [www.akkr.dk](http://www.akkr.dk).

# Appendix 3. Audit trails

## **The accreditation panel's choice of audit trails**

The accreditation panel has selected two audit trails for the institutional accreditation of the IT University of Copenhagen (ITU). The selected audit trails aim to illustrate how your quality assurance system works in practice. The accreditation panel has selected the following audit trails:

1. Content and organisation of study programmes
2. Students' contact with the relevant research environment.

## **Audit trail 1: Content and organisation of study programmes**

The purpose of the audit trail is to examine how ITU has a systematic practice concerning organisation and implementation of study programmes. Moreover, the purpose is to examine how ITU uses feedback from students to ensure the quality and develop the content and organisation of individual study programmes with special regard to teaching, examinations and workload. The audit trail examines how quality processes in relation to the Study Programme Reports, including discussions in Subject Area Teams, the Board of Studies and other relevant bodies, contribute to this. Finally, the purpose is to examine how ITU acts on issues identified and follows up on initiatives launched, including feedback from teachers to students about changes made.

The audit trail was chosen because the panel has an interest in students' involvement in and influence on quality assurance of their study programmes. The choice of theme should be seen in light of the first site visit, where the panel engaged in many interesting dialogues concerning feedback loops in quality assurance at ITU.

## **Study programmes chosen for this audit trail**

1. BSc in Digital Design and Interactive Technologies
2. MSc in Digital Innovation and Management
3. MSc in Software Design

The study programmes have been selected so that they vary between different disciplinary and interdisciplinary perspectives, degree levels, students' educational backgrounds and number of students. Relevant key figures from Uddannelseszoom have also been considered by the accreditation panel, for instance the reported level of stress from students.

## **Written documentation requested**

1. Study Programme Reports 2020 and 2021 from the selected study programmes
2. Education Portfolio Report 2020 and 2021
3. The latest course descriptions, as well as the previous one if changes have been made for:
  - Digital Material and Interactive Artifacts (BSc Digital Design and Interactive Technologies)
  - Navigating Complexity: Mapping, Visualisation and Decision-making (MSc in Digital Innovation and Management)
  - Discrete Mathematics (MSc in Software Design)

4. Course evaluations from the selected courses
5. Other student evaluations from the relevant study programmes
6. Minutes from meetings in Board of Studies, SATs and semester workshops concerning content and organisation of the selected study programmes
7. Material from student reference groups or similar concerning the selected study programmes
8. Examples of mapping of learning outcomes from the selected study programmes.

#### **Interview groups**

1. Executive management
2. The Education Group
3. Students represented in SATs from selected study programmes
4. 6 students, including students in reference groups if possible
5. 6 teachers (approx. 4 VIPs and 2 DVIPs), including Course Managers
6. Programme Coordinators from the selected study programmes
7. Heads of Department from departments responsible for the selected study programmes
8. Heads of Study Programme from the selected study programmes.

#### **Audit trail 2: Students' contact with the relevant research environment**

The purpose of this audit trail is to examine how ITU has prioritised, formulated goals and taken strategic initiatives at institutional level concerning students' contact with research environments. Also, the panel is curious to explore how ITU has a systematic practice in the field. In addition, the purpose is to look at how ITU systematically monitors students' regular contact with research environments relevant to their particular study programme using quantitative and qualitative data. Finally, the purpose is to examine how ITU acts on issues identified and follows up on initiatives launched.

Based on the written documentation provided by ITU as well as information from the first site visit, the panel is interested in learning more about how students are systematically included in dialogues about the research base of their study programmes.

#### **Study programmes chosen for this audit trail**

1. BSc in Software Development
2. MSc in Digital Innovation and Management
3. MSc in Digital Design and Interactive Technologies

The programmes have been selected so that they vary between different scientific departments, degree levels and number of students. Relevant key figures have also been considered by the accreditation panel, including ITU's VIP/DVIP ratio at study programme level. In selecting one study programme overlapping with audit trail 1, the panel has taken into account the amount of documentation that ITU must deliver.

#### **Written documentation requested**

1. Study Programme Reports for 2020 and 2021 from the selected study programmes
2. Education Portfolio Report for 2020 and 2021
3. The performance model of ITU (STÅ-VIP-TFTE)
4. Relevant VIP/DVIP ratios and their basis of calculation
5. Minutes from meetings in Board of Studies, SATs and semester workshops concerning research-base of study programmes
6. Latest staffing plans for:
  1. Analyse, design og softwarearkitektur med projekt (BSc in Software Development)
  2. Navigating Complexity: Mapping, Visualisation and Decision-making (MSc in Digital Innovation and Management)
  3. Advanced Design Processes (MSc in Digital Design and Interactive Technologies)
7. Supervision evaluations from the selected study programmes
8. Internal documentation concerning the labs and similar regular points of contact between students and researchers.

#### **Interview groups**

1. 6 teachers (approx. 4 VIPs and 2 DVIPs), including Course Managers
2. Students represented in SATs from selected study programmes
3. 6 students, including students from reference groups or similar if possible
4. Staff from Research and Learning Support, including Course Staffing Coordinators
5. Executive management
6. The Education Group
7. Heads of Department from departments responsible for the selected study programmes
8. Heads of Study Programme from the selected study programmes.

# Appendix 4. Site visit programmes

## First site visit at ITU – programme with meeting participants

<b>Tuesday 23 November, 2021</b>	
<b>Time</b>	<b>Meeting</b> (All meetings are in meeting room 2F14, Emil Holms Kanal)
08:30 – 9:00 AM	Panel meeting
9:00 – 9:30	Meet and greet (Atrium outside meeting room 2F14)
9.30 – 10.30	<b>The management</b>
10.30 – 11:00	Panel meeting
11:00 – 11:45	<b>The Education Group</b>
11.45 – 1:00	Panel meeting and lunch (Meeting room 3A07 in Rued Langaards Vej 7)
1:00 – 1:30	Panel's guided tour of the IT University of Copenhagen
1.30 – 2:15	<b>Students</b>
2.15 – 2:30	Panel meeting
2:30 – 3:15	<b>Head of Departments</b>
3.15 – 3.45	Panel meeting
3:45 – 4:30	<b>Employers' Panels</b>
4:30 – 5:15	Panel meeting

<b>Wednesday 24 November, 2021</b>	
<b>Time</b>	<b>Meeting</b>
9:00– 9:30 AM	Panel meeting
9:30 – 10:30	<b>Head of Study Programmes</b>
10:30 - 11:45	Panel meeting
11:45 – 12:30	<b>The management</b>
12:30 – 13:45	Panel meeting and lunch

**Programme for the second site visit at the IT University of Copenhagen (ITU)**

8-10 March 2022

<b>Tuesday 8 March 2022</b>	
<b>Audit trail 1: Content and organisation of study programmes</b>	
<b>Time</b>	<b>Meeting/interview group</b>
8:45 – 9:15 AM	Panel meeting
9:15 – 10:15	<b>6 Students (non-elected)</b> <ul style="list-style-type: none"> <li>▪ Student from BSc in Digital Design and Interactive Technologies</li> <li>▪ MSc in Digital Innovation and Management</li> <li>▪ MSc in Software Design</li> </ul>
10:15 – 10:45	Panel meeting
10:45 – 11:30	<b>3 Students in Subject Area Teams</b> <ul style="list-style-type: none"> <li>▪ BSc in Digital Design and Interactive Technologies</li> <li>▪ MSc in Digital Innovation and Management</li> <li>▪ MSc in Software Design</li> </ul>
11:30 – 12:30	Panel meeting + lunch
12:30 – 13:30	<b>3 Heads of Study Programme</b> <ul style="list-style-type: none"> <li>▪ BSc in Digital Design and Interactive Technologies</li> <li>▪ MSc in Digital Innovation and Management</li> <li>▪ MSc in Software Design</li> </ul>
13:30 – 14:00	Panel meeting
14:00 – 14:45	<b>3 Programme Coordinators + Team Leader from Research and Learning Support</b> <ul style="list-style-type: none"> <li>▪ BSc in Digital Design and Interactive Technologies</li> <li>▪ MSc in Digital Innovation and Management</li> <li>▪ MSc in Software Design</li> <li>▪ Team Leader, Learning Support: Annelise Agertoft</li> </ul>
14:45 – 15:15	Panel meeting
15.15 – 16:15	<b>6 Teachers, including Course Managers and DVIP</b> <ul style="list-style-type: none"> <li>▪ BSc in Digital Design and Interactive Technologies</li> <li>▪ MSc in Digital Innovation and Management</li> <li>▪ MSc in Software Design</li> </ul>
16.15 – 17:00	Panel meeting

<b>Wednesday 9 March 2022</b>	
<b>Audit trail 2: Students' contact with the relevant research environment</b>	
<b>Time</b>	<b>Meeting</b>
09:00 – 9:30 AM	Panel meeting
9:30 – 10:30	<b>6 Students (non-elected)</b> <ul style="list-style-type: none"> <li>▪ BSc in Software Development</li> <li>▪ MSc in Digital Innovation and Management</li> <li>▪ MSc in Digital Design and Interactive Technologies</li> </ul>
10:30 – 11:00	Panel meeting
11:00 – 11:45	<b>3 Students in Subject Area Teams</b> <ul style="list-style-type: none"> <li>▪ BSc in Software Development</li> <li>▪ MSc in Digital Innovation and Management</li> <li>▪ MSc in Digital Design and Interactive Technologies</li> </ul>
11:45 – 13:00	Panel meeting + lunch
13:00 – 14:00	<b>3 Heads of Study Programme</b> <ul style="list-style-type: none"> <li>▪ BSc in Software Development</li> <li>▪ MSc in Digital Innovation and Management</li> <li>▪ MSc in Digital Design and Interactive Technologies</li> </ul>
14:00 – 14:30	Panel meeting
14.30 – 15:30	<b>6 Teachers, including Course Managers and DVIP</b> <ul style="list-style-type: none"> <li>▪ BSc in Software Development</li> <li>▪ MSc in Digital Innovation and Management</li> <li>▪ MSc in Digital Design and Interactive Technologies</li> </ul>
15:30 – 16:30	Panel meeting

<b>Thursday 10 March 2022</b>	
<b>Audit trail 1: Content and organisation of study programmes</b>	
<b>Audit trail 2: Students' contact with the relevant research environment</b>	
<b>Time</b>	<b>Meeting</b>
8:30 – 9:00 AM	Panel meeting
9:00 – 10:00	<b>Heads of Department</b> <ul style="list-style-type: none"> <li>▪ Head of Department, Business IT</li> <li>▪ Head of Department, Computer Science</li> <li>▪ Head of Department, Digital Design</li> </ul>
10:00 – 10:30	Panel meeting
10:30 – 11:30	<b>Education Group</b> <ul style="list-style-type: none"> <li>▪ Head of Student Affairs and Programmes</li> <li>▪ Head of Research and Learning Support</li> <li>▪ Head of Communication</li> <li>▪ Dean of Education</li> </ul>
11:30 – 12:45	Panel meeting + lunch
12:45 – 13:45	<b>Executive Management</b> <ul style="list-style-type: none"> <li>▪ Interim Vice-Chancellor</li> <li>▪ University Director</li> <li>▪ Dean of Education</li> </ul>
13:45 – 15:30	Panel meeting



# Appendix 5. Expectations for effective quality assurance

## **Criterion I, Publicly available policy**

Expectations for effective quality assurance include that:

- The institution has published a quality policy that generally describes how quality assurance supports the institution's goals for programme quality and relevance.

## **Criterion I, Anchoring at management level, clear division of responsibilities and quality culture**

Expectations for organisation of effective quality assurance include that:

- On the basis of a clear division of responsibilities and labour and appropriate exchange of information, senior management and other management levels make decisions to promote quality and relevance when problems or needs to develop the provision of programmes are identified. The division of responsibilities and labour as well as exchange of information support that decisions are implemented effectively and in time.
- Students, teachers, other employees and management are included in dialogue that supports issues being discussed openly and quality assurance being carried out regularly and as intended.
- Students, teachers, other employees and management work systematically in practice to ensure the quality of teaching and programmes, and that their input, experience and assessments are included in the ongoing development of quality assurance.



## **Criterion I, Monitoring, standards, reporting and provision**

These four sub-items under criterion I concern monitoring, standards, reporting and what quality assurance is to cover. Expectations linked to the four sub-items are generally that, on the basis of goals for quality and relevance, there should be coherence between plan, efforts (practice), monitoring and follow-up/decision for all provisions of programmes and parts of provision of a programme in the institution's systematic quality assurance.

Expectations for effective quality assurance include that:

- The quality assurance covers all provisions of programmes at the institution, including the parts of the provision not completed at the institution, e.g. work placement.
- Well-founded reasons form the basis for the institution's establishment of clear, measurable standards making it possible to decide whether objectives for programme quality and relevance are met.
- Monitoring is based on solid information, whether qualitative or quantitative.
- Well-founded reasons form the basis for the choice of information on quality and relevance the institution will monitor. Information may e.g. cover knowledge base, study environment, study activity, student evaluations, exam results, dropout rates, time taken to complete programmes, internationalisation and employment. Specific considerations at an institution or a provision may explain why some information has been left out and/or supplemented by other information.
- Ongoing collection and reporting of information are carried out systematically, and any problems and development opportunities are identified on the basis of a comprehensive overview, forming the basis for holistic decisions about action and development at the individual provision of a programme.
- Decisions are clear with regard to what is to be addressed, what is to be done and when, and who is responsible for taking action.
- The institution systematically takes action on the basis of the information collected in a manner that addresses any goals that have not been attained and a manner that develops the quality and relevance of the individual programme.
- The institution follows up in an appropriate manner to see whether decisions on action have been implemented and assesses the results of the efforts.



## **Criterion I, Involvement of external experts in the evaluation of provisions of programmes**

Expectations to involve external experts in evaluating the provisions of programmes aimed at ensuring that the institution gets a qualified external perspective on the quality and relevance of the individual provisions of programmes that is able to challenge the views held internally at the institution.

Expectations on effective quality assurance include that:

- The evaluation of quality and relevance of the individual provisions of programmes is performed by experts who have extensive knowledge of the academic areas in the provision of programmes and of labour market needs.
- As a minimum, the experts who have extensive knowledge of the academic areas in the provision of a programme are independent of the institution, thus allowing them to take an external perspective. Other experts are expected to be independent of the programme being evaluated.
- Information used by the institution itself in its quality assurance forms part of the evaluation, and that the institution allows the results of the evaluation to form part of the continued quality assurance by the institution.
- Evaluations of provisions of programmes are conducted at appropriate intervals.
- The institution includes an international perspective through participation of international experts when the institution considers it relevant.



### **Criterion I, Regular assessments by the external environment of the institution**

Expectations for effective quality assurance include that:


- Contact to external examiners, potential employers and graduates as well as any other external stakeholders is organised and has a scope such that it contributes assessments and input that are valuable to the quality and relevance of individual provisions of programmes.
- The institution uses relevant assessments and input to ensure its provisions of programmes and to develop such provision, and that the institution act on the basis of problems or development needs identified.



## **Criterion II, Provisions of programmes are linked to relevant academic environments (vocational and higher maritime programmes)**

Expectations for effective quality assurance include that:

- The institution has considered and set priorities for the knowledge base for new and existing provisions of programmes, including how such knowledge base for the provision is to be provided through external sources of knowledge and external collaboration and possibly through the institution's own practice-oriented and applied research and development activities.
- The institution has a well-considered and systematic practice for teacher groups to keep themselves up-to-date on knowledge within the areas in which they teach, through external sources (e.g. knowledge from practice and articles) and external collaboration and possibly through the institution's own research and development activities.
- Through systematic information about knowledge activities, the relevant management levels gain insight, enabling them to assess whether individual provisions of programmes are based on updated and relevant knowledge.
- The relevant management levels take responsibility for the knowledge base of individual provisions of programmes, act on the basis of information about any issues, and follow up on initiatives launched.



### **Criterion II, Students are in contact with the knowledge base of the provision of a programme (vocational and higher maritime programmes)**

Expectations for effective quality assurance include that:

- The institution has considered and set priorities for students' contact to the knowledge base at individual provisions of programmes in order to support students in achieving the intended learning outcomes.
- The institution has a systematic practice to ensure that students are in regular contact with the knowledge base throughout the programme.
- The relevant management levels assess whether, during a programme, including work placements, students are in regular contact with the programme knowledge base, and in case of any issues, act and follow up on initiatives launched.



### **Criterion II, Provisions of programmes are linked to relevant academic environments (university programmes)**

Expectations for effective quality assurance include that:

- The institution has considered and set priorities for how new and existing programmes should be research-based.
- The institution has a well-considered and systematic practice for how to ensure that key subject components are research-based.
- The institution systematically and regularly monitors that the key subject components of individual programmes are research-based.
- The relevant management levels have information and insight enabling them to assess whether key subject components of individual programmes are research-based.
- The relevant management levels take responsibility for the research base of key subject components on individual provisions of programmes, act on the basis of any issues, and follow up on initiatives launched.



## **Criterion II, Students are in contact with the knowledge base of the programme (university programmes)**

Expectations for effective quality assurance include that:

- The institution has considered and set priorities for students' regular contact to a relevant research environment.
- The institution has a systematic practice for how, in an appropriate manner, students are in contact with the research community, including ensuring that students receive a high level of teaching and supervision within key subject components, and thereby achieve the programme intended learning outcomes.
- The institution systematically and regularly monitors whether, in an appropriate manner, students are in contact with the research environment throughout the programme.
- The relevant management levels have information and insight enabling them to assess whether students are in contact with the research environment.
- The relevant management levels take responsibility for students' contact with the research environment, act on the basis of any issues, and follow up on initiatives launched.



### **Criterion III, Level, content, and organisation**

Expectations for effective quality assurance include that:

- In its ongoing work on programme regulations, the institution ensures that programmes are described with a level and content that corresponds to the overall intended learning outcomes from the programmes and the relevant type descriptions in the qualification framework.
- The institution has a well-considered and systematic practice, which takes outset in learning objectives in organisation and implementation of provision of programmes, including teaching, the other programme activities and examinations.
- The institution systematically ensures the pedagogical and didactic quality in planning and implementation, so that it supports learning.
- The institution systematically and regularly monitors whether the organisation and implementation of the provision of a programme supports the opportunities for students to achieve the learning objectives and with a workload that corresponds to the prescribed specifications for the programme.
- The institution acts on the basis of information about any problems with planning, implementation and workload and follows up on initiatives made.
- The institution has considered and prioritised work to support the selected approach to student-centred learning and quality assures the activities this work entails.



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