
QUALITY POLICY FOR 2016

IT University of Copenhagen

Version 6 (Final Version)

NOVEMBER 27, 2015
IT UNIVERSITY OF COPENHAGEN
Rued Langgaards Vej 7, DK 2300 S

Preamble of the Quality Policy	
Summary	<p>The Quality Policy defines Quality Standards of the IT University of Copenhagen (ITU). Further, the document names ITU's so-called (<i>Quality</i>) <i>Work Processes</i> (e.g., the work processes through which the Quality Standards are maintained and monitored); and describes the so-called <i>Alarm Handling Processes</i>, i.e., the processes that are invoked upon discovery of breach of quality standards.</p>
Context for the Quality Policy	<p>The Quality Policy is sub-ordinate to ITU's overall strategy and development contract, which contain development goals. The university reports on all development goals in its Annual Report and the reporting is audited by the university's Auditor and by the Auditor General.</p> <p>The Quality Policy is approved by Executive Management, who submits it to the Danish Accreditation Institution for their assessment, as part of the institutional accreditation process.</p> <p>At ITU, a study programme is said to be <i>ideal</i>, if [2, p. 6]</p> <ol style="list-style-type: none"> 1) it attracts a large number of well-qualified students; and 2) the academic contents and the teaching are both world-class; and 3) it gives the students the competences needed for the future job market. <p>ITU systematically works towards all of its study programmes becoming ideal. This quality enhancement work is formalised through <i>development goals</i>, present in the university's development contract[3] and strategy documents [1,2].</p> <p>Any failure to reach development goals is obviously a challenge that the university must address, but it is not necessarily a sign of poor quality in existing study programmes.</p> <p>By contrast, the university has defined a set of <i>quality standards</i>, the breach of which is a sign of quality issues that need to be dealt with in a manner, which has been thought out in advance. That is the quality assurance part of the quality work.</p> <p>We use this distinction between <i>goals</i> and <i>standards</i> throughout this Quality Policy.</p> <p>The Quality Policy has been designed in accordance with European Standards and Guidelines (ESG) for internal quality assurance within higher education institutions [4] and the guidelines for institutional accreditation by the Danish Accreditation Institution[5].</p>
Purpose	<p>Ideal study programmes arise not just (or even primarily) through reporting and control but, more importantly, through the day-to-day work that faculty perform with other faculty, with external stakeholders and with students.</p>

	<p>To assure and continuously enhance quality, however, it is necessary to know the current state of affairs, to record the arguments for changes and to ensure that good ideas are tested and, if successful in test, adopted in practice. This requires appropriate organizational structures and coordination of efforts. The purpose of this Quality Policy is to describe the organisation and coordination of efforts through which ITU continuously and systematically assures and enhances quality.</p> <p>The day-to-day users of the Quality Policy include teachers; those who have leadership responsibilities for teaching or research at ITU; all student and faculty representatives serving on Subject Area Teams and the Board of Studies; and those members of the administration who work with education.</p>
<p>Scope of the Quality Policy</p>	<p>The Quality Policy defines ITU’s Quality Standards; names ITU’s so-called (<i>Quality</i>) <i>Work Processes</i> (e.g., the work processes through which the Quality Standards are maintained and monitored); and defines the so-called <i>Alarm Handling Processes</i>, i.e., the processes that are invoked upon discovery of breach of quality standards. Some alarm handling actions are <i>mandatory</i> (described using words like “must”); other actions, described using words like “may” or “suggest”, are <i>recommendations</i>, which may be replaced with other ones which, in the eyes of those responsible for the quality standards, are at least as effective as the ones listed in this document.</p> <p>The Quality Policy focusses on quality standards. (By contrast, the achievement of goals typically happens through establishment of a formal project within ITU’s project governance structure. However, the reporting structure defined by the Quality Policy includes reporting on goals.</p> <p>The Quality Policy applies to all Bachelor, MSc and part-time programmes at ITU. The procedures for starting new study programmes are described in a separate document [21].</p>
<p>Policy Areas</p>	<p>The Quality Policy has three so-called <i>Quality Policy Areas</i>, corresponding to ITU’s definition of what it means for a study programme to be ideal:</p> <ol style="list-style-type: none"> 1) Recruitment and Admission of Students 2) Teaching and Learning 3) Graduates’ Careers <p>For each Quality Policy Area, we state in this Quality Policy:</p> <ol style="list-style-type: none"> a) Relevant context in which the Quality Policy Area resides, e.g., relevant development goals; b) Definition of the quality standards for that area. <p>Every quality standard is either decidable by itself or broken down into sub-ordinate standards, which are decidable; in the latter case, we say that the standard is met, if all the sub-ordinate standards are met.</p> <p>For each standard, the Quality Policy states who is responsible for the standard.</p>
<p>Responsibility</p>	<p>The Vice Chancellor is responsible for the Quality Policy; the implementation of</p>

	<p>the policy takes place through processes anchored in Executive Management.</p> <p>The implementation of the policy respects delegations given by law or by delegation from the Vice Chancellor. For example, by law, the Board of Studies is responsible for the quality assurance of individual study programmes, whereas, by delegation from the Vice Chancellor, the Department Management is responsible for hiring of faculty.</p> <p>Throughout this Quality Policy, to be responsible for a quality standard means:</p> <ul style="list-style-type: none"> • At regular intervals (which are defined in this Quality Policy), one must find out whether the standard is met or not • One must record the documentation showing that the standard is met or not at the place indicated in the Quality Policy • If the standard is not met, one must initiate follow-up actions, as stated in the quality standard. <p>This Quality Policy lists responsibilities by quality standards rather than by roles. Thus, the definition of a standard within a Quality Policy Area contains the following fields:</p> <ul style="list-style-type: none"> • Summary (optional): A brief summary about what the quality standard says; • Terminology (optional): Introduction of concepts or notation used in this (and perhaps subsequent) quality standards; • Predicate: a decidable, boolean predicate defining when the standard is met; • Responsible: reference to role or collegial body which is responsible, in the sense defined in this Preamble; • (Quality) Work Process: reference to or description of a process which contains the monitoring and follow-up actions of the standard; see [19] for descriptions of all processes; • Place of record: where is documentation of the fulfilment or otherwise of standard to be stored; • Alarm-handling Process: description of process describing corrective steps in cases the standard is <i>not</i> met, i.e., if the predicate of the standard is <i>false</i>.
Primary Quality Data	<p>Some standards refer to or rely on so-called <i>Primary Quality Data</i>, of which there are the following:</p> <ul style="list-style-type: none"> • Recruitment and Admission of Students <ol style="list-style-type: none"> a) Recruitment and Admission (number of applicants, number of applicants admitted, and number of admitted students together with origin of admitted students) • Teaching and Learning <ol style="list-style-type: none"> b) For full-time studies: drop out after first year, average delay, compared to Curriculum Document¹ schedule, and rate of students who complete within scheduled time plus one year

¹ In this document, we use the term “Curriculum Document” is used for what in Danish is called “studieordning”. We use the term “curriculum” to refer collectively to all learning objectives and learning activities.

	<ul style="list-style-type: none"> c) Research-based teaching (VIP/DVIP-ratio) d) Course Evaluation Results e) Student Evaluations of Final Projects and Entire Programmes f) Intensity of learning activities, measured as lessons taught (Danish: “undervisningslektioner”) <ul style="list-style-type: none"> • Graduates’ Careers <ul style="list-style-type: none"> g) Employment: gross unemployment of BSc and MSc graduates 4 to 7 quarters after graduation (study programme, ITU, national average) h) Ratio of MSc graduates employed within the private sector for the most recent 10 years of graduates <p>The definitions of the Primary Quality Data are found in <i>Appendix A Definitions of Primary Quality Data</i>.</p> <p>The University Director is responsible for making Primary Quality Data available to all employees who partake in the (Quality) Work Processes in time for when the data is to be used in the process in question.</p> <p>Some Primary Quality Data is already available to Heads of Study Programmes through existing IT systems. ITU aims to increase the degree to which Heads of Study Programmes can access Primary Quality Data through IT systems.</p> <p>Data provided by the Ministry of Further Education and Science will be used, whenever available; we assume that the Ministry of Further Education and Science will continue to provide Primary Quality Data g) and h) for ITU’s full-time study programmes.</p> <p>Clearly, quality of education cannot be reduced to Primary Quality Data. Primary Quality Data can show obvious strengths or issues, but the reports of the Quality System consider a broader range of aspects of quality.</p>
<p>Reports and their Use</p>	<p>The Study Programme Report</p> <p>At the level of individual study programmes, the key document is the <i>Study Programme Report</i>, in which the Head of Study Programme, after hearing the Subject Area Team of the study programme, reports to the Education Group, cc the Programme-Specific Employers’ Panel for the study programme, following a template that all study programmes share. See Figure 1. The Study Programme Report contains:</p> <ul style="list-style-type: none"> • Primary Quality Data for the study programme (provided by the Administration) • Follow-up on the action plan of the previous period; • Status of goals derived from the Development Contract pertaining to the study programme • Status of quality standards pertaining to the study programme, including descriptions of follow-up actions initiated by standards that were not met; • A description of changes made to the study programme with arguments for the changes and observed effects • A Description of changes made to the study programme as a results of

- recommendations made by the employers' panel
- A SWOT-analysis for the study programme; and
- An action plan for the quality work for the coming period.

The Study Programme Report forms the basis of a recurring *Study Programme Quality Status Meeting* between the Head of Study Programme and the Education Group.

Cycle time: 1 year.

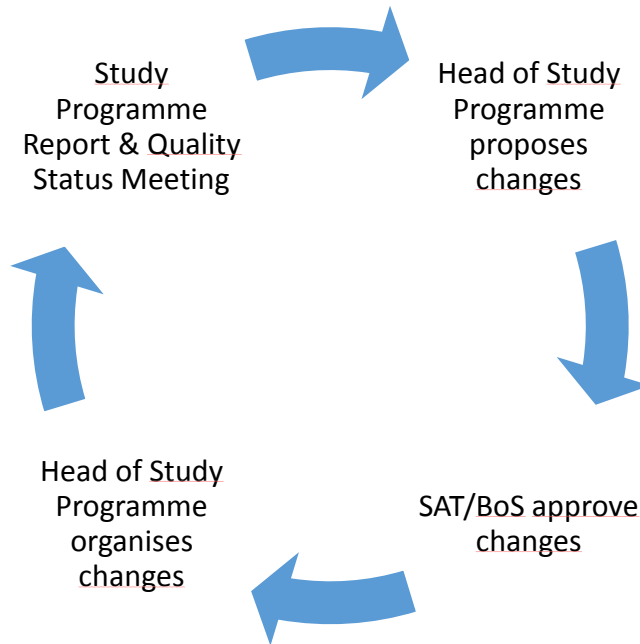


Figure 1, Context of Process StudyProgrammeReport (simplified)

The Education Portfolio Report

Based on the Study Programme Reports, the Education Group prepares an *Education Portfolio Report* and, after hearing the Board of Studies, submits the report to Executive Management. See Figure 2. The report describes:

- Strengths and successes of study programmes, including contributions to reaching development goals
- Opportunities for the university
- Threats and Weaknesses
- A tabular summary of the extent to which ITU's study programmes has met the goals and standards (red/green), with one row per goal/standard and one column for each study programme.
- Recommendations to Executive Management concerning the future of those study programmes that have breaches of quality standards.
- Recommendations to Executive Management concerning how the quality system itself might be improved.

Cycle time: 1 year.

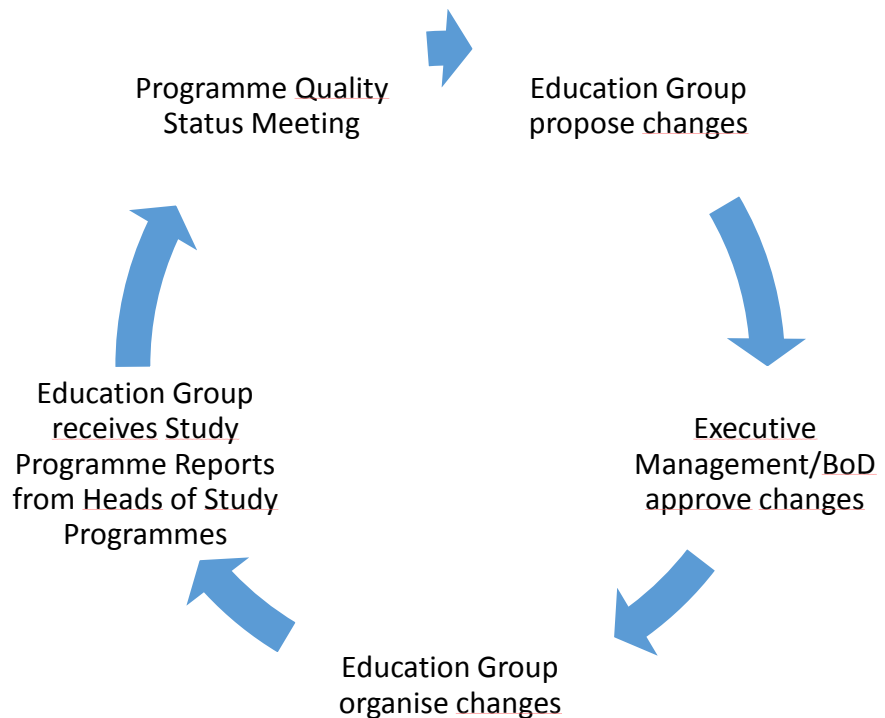


Figure 2 The Education Portfolio Report and its use in Portfolio Quality Status Meetings (simplified)

The Decision Memo

Based on the Education Portfolio Report, Executive Management can decide

- To reduce or increase admission numbers;
- To terminate a study programme
- To initiate the development of a new study programme
- To make changes to the organisation of the quality system;

Management document their decisions in a *Decision Memo*. Furthermore, the ITU Board of Directors read and discuss the Education Portfolio Report and question Executive Management about their follow-up actions.

Cycle time: 1 year.

The Programme-Specific Employers' Panel Report

The Programme-Specific Employers panels [6] each write a *Programme-Specific Employers' Panel Report*. The report is used by the Executive-level Employers' Panel; the Heads of Study Programmes of the programmes in question; the Head of Studies; the Education Group and the Vice Chancellor. The Programme-Specific Employers' Panel Report is discussed by the Subject Area Team and serves as input to the Study Programme Report.

Cycle time: 1 year.

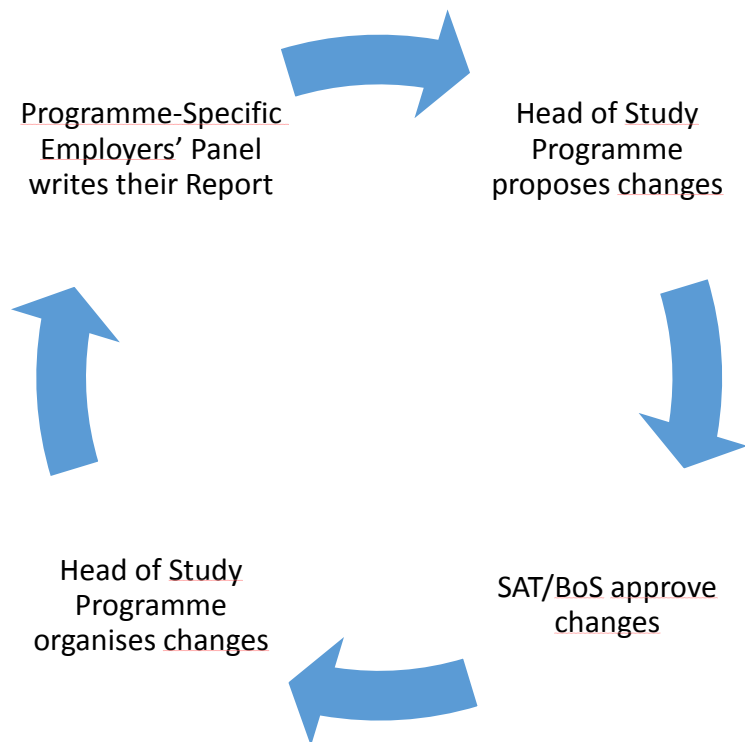


Figure 3 Programme-Specific Employers' Panel meetings (simplified)

The Executive-Level Employers' Panel Report

The Executive-Level Employers panel [7] writes an *Executive-Level Employers' Panel Report*, which it submits to the ITU Board of Directors through Executive Management, cc the Head of Studies. The Executive-Level Employers' Panel Report is discussed at a meeting in the Board of Directors. Executive Management is responsible for implementing whatever changes the Board of Directors decide.

Cycle time: 1 year.

Programme Review Reports

ITU organizes regular reviews of its study programmes [8,9,10]. Each review involves the formation of an external panel, which, upon completion of the review, produces a *Programme Review Report* [10], which it submits to the Education Group. The Programme Review Report serves as input to the writing of the Study Programme Report.

Cycle time: 5 years (two study programmes are reviewed every year and there are currently 10 study programmes).

Study Environment Assessment (Danish: "undervisningsmiljøundersøgelse")

As required by law, ITU regularly conducts a Study Environment Assessment. Follow-up actions on the Study Environment Assessment Report are recorded in the Study Programme Reports and the Education Portfolio Report.

Cycle time: at most 3 years. Most recent Study Environment Assessment was

	<p>October 2014.</p> <p>Graduate Surveys (Danish: “dimittendundersøgelser”) A graduate survey is a survey in which persons who have graduated within the previous three years from the university are asked questions relating to their transition into the labour market. Graduate Surveys provide input which is relevant for the continuous improvement of the study programmes. There are two types of Graduate Surveys: programme-specific and overall. The programme-specific graduate surveys are input to the <code>StudyProgrammeReport</code> process, the <code>EmployersPanelMeeting</code> process and the relevant Programme Review Report. The overall graduate survey is input to the <code>ExecLevelEmployersPanelMeeting</code> and the <code>PortfolioReport</code> processes.</p> <p>Cycle time: 3 years (2012, 2015, 2018, ...)</p>
(Quality) Work Processes	<p>By (Quality) Work Processes we mean documented work processes which play a role in the quality assurance and quality enhancement work. We put the word Quality in parentheses to emphasise that ITU does not have a separate kind of work process for “quality work” but that, rather, quality assurance and enhancement are part of day-to-day work processes.</p> <p>In order to support continuous improvement, (Quality) Work Processes are cyclical in nature. Since activities implementing the Quality Policy are embedded in production processes which are also cyclical in nature (due to the yearly or half-yearly cycles that permeate all study programmes), (Quality) Work Processes are often described as cyclic processes (Danish: “årshjul”).</p> <p>Cyclic improvement processes follow the following pattern: collect data; suggest changes; approve changes; and organise changes. These phases are time boxed within the cyclic processes. Some changes take longer than one cycle to implement. That is why there is no time boxed “implement” phase in the cyclic processes. Rather, <i>organising</i> changes may mean <i>implementing</i> changes (if they can be made quickly) or <i>planning</i> larger changes, for example as PPG projects.</p> <p>There are two kinds of processes: basic and composite.</p> <p>The declaration of a basic process specifies what types of data the process needs in order to start and what type of result it is going to deliver. Furthermore, the specification describes who owns the process. The owner is the person, role or organisational unit, who is responsible for the result being produced within the allocated period. The allocated period is also specified (in working days).</p> <p>The other kind of process is the composite process. It too has a name, an owner, typed parameters and a result type. However, the body of the process is different in that it can contain calls to other processes (basic as well as composite). Cyclic Processes are often composite</p>

	<p>We have expressed the process declarations in a domain-specific specification language, called Flow, which we have devised to this end. Flow-specifications of all the processes mentioned in this Quality Policy are available in a separate compendium [19], which also contains a computer-generated annual wheel, which lists the major yearly tasks and the information flow between them.</p> <pre> proc CourseEvaluation(t: tick): (Organised Course-Level Changes* Organised Course-Level Changes* Organised Course-Level Changes* Organised Course-Level Changes) owner Board of Studies work a=CompleteCourseEvaluationQuestions(t); b=RespondToStudentEvaluations(a); (och_GBI=CevalFollowUp(GBI, a, b) och_DIM=CevalFollowUp(DIM, a, b) och_DMD=CevalFollowUp(DMD, a, b) och_DDK=CevalFollowUp(DDK, a, b)) result (och_GBI, och_DIM, och_DMD, och_DDK); </pre> <p>Figure 4 Example of Process Specification, namely the CourseEvaluation process for four study programmes (GBI, DIM, DMD and DDK). The process awaits a start signal (t). When executed, the process will return a quadruple of organised changes, one for each study programme. This happens in three steps. First, the students complete the course evaluation questionnaires, returning in a set of answers (a). Second, teachers respond to these answers, resulting a set of responses (b). Third, four follow-up processes are run in parallel (), resulting in each their set of organised changes (och_GBI, och_DIM, och_DMD and och_DDK). Then the quadruple of changes are returned as the result of the process. Each of the sub-processes (CompleteCourseEvaluationQuestions, RespondToStudentEvaluation and CevalFollowup have their own specification (not show here, but present in [19]).</p> <p>Flow is executable, the result being an annual wheel. The part of the annual wheel for 2016 corresponding to the first of the two annual runs of the course evaluation is shown in Appendix B.</p>
Decision Powers	<p>The Work Processes are designed with the following principles in mind:</p> <ol style="list-style-type: none"> 1. Responsibility and Decision Powers must be aligned: those who have the responsibility must also have the decision powers needed to live up to that responsibility; 2. Decisions must be made as close to the actual teaching as possible, and

	<p>no closer. For example, at course manager is free to make changes on a course which have no significant bearing on the intended learning outcomes of the course; other course-level changes must be approved at the appropriate level, for example a subject area team or board of studies, depending on the scope of the consequences of the change;</p> <p>3. Collective bodies (including subject area teams, board of studies and employers’ panels) must be involved in the matters that, by law or by their terms of reference, they are supposed to discuss or approve. For example,</p> <ol style="list-style-type: none"> a. Changes on a study programme proposed by a course manager which may in some significant way impact the learning outcomes of the course or the study programme should be approved by the appropriate subject area team; b. Changes on one study programme proposed by a subject area team that may impact more than that study programme should be approved in the Board of Studies; c. While the university decides what is taught in its study programmes, the relevant employers’ panel(s) should be heard about changes to study programmes that may impact the employability of graduates; d. Executive Management recommends the creation and termination of study programmes to the Board of Directors, after hearing of the Board of Studies, the Education Group and, in the case of termination, the relevant Employers’ Panel.
<p>Revision of Quality Policy</p>	<p>Executive Management review the Quality Policy Preamble every three years. In addition, Executive Management can at any time initiate revision of the Quality Policy or parts thereof and is obliged to consider doing so, if the Education Portfolio Report reveals systemic quality issues. The Board of Studies and the Education Group can submit requests for changes to the Quality Policy to the Executive Management.</p> <p>The Development goals and standards of the Quality Policy are revised once a year, although the Development goals are given by the Development Contract, which typically has goals for three consecutive years. The Head of Department and the Heads of Study Programme formulate study programme-specific goals and standards once a year. It is the responsibility of the Head of Department to ensure that fulfilment of the study programme specific goals and standards is sufficient for the achievement of the institutional goals and standards decided by the Board of Directors.</p>
<p>References</p>	<ol style="list-style-type: none"> 1. ITU Strategy 2012-2016 2. ITU Education Strategy 2012-2016 3. ITU’s Development Contract 4. European Standards and Guidelines 5. The Danish Accreditation Institution: Institutional Accreditation (guide) 6. Terms of Reference Programme-Specific Employers’ Panels 7. Terms of Reference Executive-Level Employers’ Panel 8. Concept for Review of ITU Study Programmes 9. Template for Terms of Reference for Programme Reviews 10. Template for Programme Review Report

	<ol style="list-style-type: none"> 11. Role Description for Head of Studies 12. Role Description for Head of Study Programme 13. Role Description for Head of Board of Studies 14. Role Description for Head of Section 15. Role Description for Head of Department 16. Role Description for Vice Chancellor 17. Subject Area Team Meetings 18. Description of Education Group 19. IT University of Copenhagen: Compendium of Work Processes Supporting the Quality Policy of the IT University of Copenhagen 20. The role of the Board of Studies is described in § 15 of "Vedtægter for IT-Universitetet i København", signed June 20, 2012 21. Concept for Development of New Study Programmes at the IT University of Copenhagen
Transparency	<p>This document and the documents listed under "References" items 1 through 5 are public documents, available through the Internet. The documents listed under "References" item 6 to 20 are available through the Intranet or F2.</p> <p>Study Programme Reports, Education Portfolio Reports, Programme Review Reports and reports from the employers' panels produced as a result of the actions described by this Quality Policy are public information and can be provided upon request.</p>
History	<p>Executive Management, the Head of Studies and the Head of Department drafted and edited this document. The document was repeatedly discussed by the Extended Group of Managers (which includes the Education Group; all section heads and the four Heads of MSc Study Programmes), before it was sent for hearing among faculty and student representatives in the Subject Area Teams and the Board of Studies and the Board of Directors.</p>

1 Recruitment and Admission of Students

Context for the Quality Policy Area (based on ITU strategies and ITU's development contract)

ITU wants to attract a large number of well-qualified students [2].

The number of admitted MSc students, who qualified at a Danish educational institution other than the IT University of Copenhagen, must be at least 230 [3].

1.1 Quality Standard

Number of Students Admitted

Summary	It is part of ITU's strategy to attract a large number of well-qualified students. This Quality Standard makes precise what "large number" means.
Predicate	The Study Programme admits at least as many students as assumed in the budget.
Responsible	Head of Study Programme
(Quality) Work Process	CheckAdmissionsOutcome
Place of record	Admission Memo (and Study Programme Report)
Alarm Handling Process	Recommendations: <ol style="list-style-type: none"> 1) Investigate whether there are changes in the competitive situation which can explain the insufficient admission; 2) Revisit red lights from previous Head of Studies report to see whether there are unresolved issues that could explain failing admission; 3) Investigate whether the number of applicants is much larger than the number of admitted students and if so, whether changes to the admission process are necessary.

1.2 Quality Standard

Qualifications of Admitted Students

Summary	It is part of ITU's strategy to attract a large number of well-qualified students. This Quality Standard makes precise what "well-qualified" means.
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1.2.1 Quality Standard

Well-qualified Students (MSc and Master degrees)

Predicate	At the time the Head of Study Programme assessed the applicants, (s)he did not recommend admission of any student whom, in the opinion of the Head of Study Programme, had weak qualifications.
Responsible	Head of Study Programme
(Quality) Work Process	CheckAdmissionsOutcome
Place of record	Admission Memo (and Study Programme Report)

Alarm Handling Process	<ol style="list-style-type: none"> 1) (Mandatory) Quantify the extent of the phenomenon, preferably with a description of what weaknesses are observed; 2) (Mandatory) Consider what changes to the admission process would be necessary to eliminate the problem; 3) (Mandatory) Consider whether there are aspects of the programme itself that could be changed in order to attract more well-qualified students; 4) Discuss with the Communications department whether the marketing of the programme needs to be changed to reach more well-qualified students.
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1.2.2 Quality Standard	
Well-qualified Students (Bachelor degrees)	
Terminology	Under the Danish coordinated application system (KOT), there are two types of applicants. Quota 1 applicants are admitted based on grades; quota 2 applicants are admitted based on other criteria as well.
Predicate	No Quota 1 applicant with a grade point average below 7.0 was admitted.
Responsible	Head of Study Programme
(Quality) Work Process	checkAdmissionsOutcome
Place of record	Admission Memo (and Study Programme Report)
Alarm Handling Process	(same as in 1.2.1)

1.3 Quality Standard	
Study Programmes Large Enough to Meet Demand	
Summary	ITU avoids rejecting well-qualified applicants on programmes for which employment rates are good.
Predicate	For all MSc and BSc programmes, it is not the case that the programme meets all employment standards (i.e., meets Quality Standard 3.2) and could have admitted 20 students more without breaking Quality Standard 1.2.
Responsible	Head of Study Programme
(Quality) Work Process	checkAdmissionsOutcome
Place of record	Study Programme Report
Alarm Handling Process	<p>Recommendations:</p> <ol style="list-style-type: none"> 1. Head of Study Programme makes a written request to the Department Management for resources necessary for an expansion of the capacity; 2. Department Management accepts or rejects the request and notifies the Head of Study Programme of its decision. If the Department Management does not have resources available, it may apply to Executive Management for a Budget Extension, before deciding.

2 Teaching and Learning

Context for the Quality Policy Area (based on ITU strategies and ITU's development contract)

From Education Strategy[2]

ITU wants the academic contents and the teaching to be world-class [2].

Furthermore [2, p. 10-11], students must be

- Learning about other's research
- Learning to do research – research methods
- Learning in research mode – inquiry-based

To ensure the first two bullets, it is important that the research faculty ensure the academic standards of the teaching (see 2.6); to ensure the last bullet, it is important that the students work with and get feedback from the research faculty (see 2.5, 2.6).

The Education Strategy explicitly mentions the role part-time lecturers can play in ensuring that the students meet the ITU understanding of what good research is, namely that good research is motivated both by a quest for deep insight and by consideration of use. Some research faculty are more motivated by a quest for deep insight than consideration of use and some part-time lecturers are more motivated by consideration of use than by the quest for deep insight, so it is important for students to work with both research faculty and part-time lecturers (see 2.5, 2.6).

Finally, the Education Strategy states that use of external lectures at part-time programs should not differ from their use at full-time programs (see 2.5).

From the development contract[3]:

1. Course Evaluation

The average of the answers from the students to the quantitative questions in the course evaluation must be at least 4.75 on a scale from 1 to 6. This goes for each year of the period of the development contract (see 2.1).

2. Completion Times

IT University of Copenhagen will reduce the average exceeding of time of study for its graduates in 2015 with 0.5 month compared to 2011; 1 month in 2016 compared to 2011 and 1.6 month in 2017 compared to 2011 (see 2.2).

3. Diversity

During 2015, the IT University of Copenhagen will formulate a strategy of how the university consciously exploits that its MSc students have many different educational backgrounds. By the end of 2017, the latest, the IT University of Copenhagen will have formulated and carried out the plans of action, processes and procedures belonging to the strategy. The strategy is stated below, just before 2.1.

Legal requirements to Quality

4. Qualification Framework

The academic level of each program is at least in correspondence with its Danish qualification framework level (see 2.4).

5. Research-based Teaching

The teaching is research-based (detailed in the Education Strategy [2]) (see 2.5, 2.6).

6. Teacher Development Programme

All assistant professors must follow a Teacher Development Programme (Danish: "Adjunktpædagogikum")²

Accreditation goals

7. **Ensuring the research base** (see 2.5, 2.6)
8. **Ensuring pedagogic skills** of faculty (see 2.1, 2.3, 2.7, 2.10 and 2.11)

ITU's Additional Policy Statements (introduced here in response to the 2014 Accreditation Process)

Research-Based Teaching

By an *active researcher* we understand a person who currently conducts research (at ITU or elsewhere). Post docs are included.

ITU uses a numeric indicator, called the VIP/DVIP ratio³, to measure the ratio of student learning activities that had researchers as responsible over the number of student learning activities that had part-time lecturers as responsible. ITU has a quality standard for the VIP/DVIP ratio, which applies to all study programmes (see 2.5).

Concerning teaching on courses, it is the policy of ITU that

1. Curriculum development responsibility lays with active researchers employed at ITU. Part-time teachers who are course managers collaborate with active researchers employed at ITU on course design; including planning of intended learning outcomes; learning activities and exam form.
2. The employment of DVIP in teaching on courses must have one of the following two purposes:
 - a. To bring an industry perspective and/or practical expertise to courses where it is relevant;
 - b. To ensure stability of programmes. In cases where researchers become unavailable for planned teaching with short notice before a semester starts, DVIP can be stand-ins.

Concerning supervision of thesis and other final projects, it is the policy of ITU that

3. The supervisor has to supervise and help the student to reach the appropriate academic level and provide necessary support for the thesis to meet academic standards.
4. At the master and BSc levels, the supervisor should allocate at least 15 hours for supervision per project. At MSc level, the supervisor should allocate at least 30 hours for supervision per project. The number of hours is an average, including administration and examination.
5. It is possible to split the supervisor task among several active researchers, for example in case of interdisciplinary projects, but there must always be exactly one main supervisor.
6. In rare cases, the supervisor may not be an active researcher. This may for example be the case for theses that are in areas where publication venues do not yet exist. The Head of Study Programme must approve such exemptions in writing and store the approval in the records of Student Affairs and Programmes.

Finally, ITU has a model for how much faculty should teach, the so-called 2013 ECTS Model. For example, an associate professor with no teaching deductions has to deliver 715 ECTS points each year. The Analysis Department calculates ECTS productivity per section per semester, to ensure that all

² Cirkulære om stillingsstruktur for videnskabeligt personale ved universiteter - Personalestyrelsen

³ Broadly, "VIP" ("videnskabeligt personale") stands for active researchers and DVIP ("deltids-VIP") stands for part-time lecturers (who do not have research obligations).

sections contribute to teaching according to the norm.

External Lecturers

External Lecturers should be highly regarded professionals whose professional experience can benefit the students greatly. External Lecturers should not be recruited as a means of covering persistent holes in staffing by active researchers (see 2.7).

Constructive Alignment

All planning and implementation of teaching at the IT University of Copenhagen is based on John Biggs' principles of Constructive Alignment. The overall and most important principle is that descriptions and implementation of intended learning outcome (ILO), teaching and learning activities and assessment forms must be aligned. Students should be made aware of this correlation so that they may achieve the best possible progression and results.

Student Participation

Students participate in the (quality) work processes in the following ways:

- By providing input to course evaluations and evaluation of thesis and other projects and of entire study programmes and participating in the discussion with teachers following course evaluations (see process CompleteCourseEvaluationQuestions).
- By providing input to Study Programme Reviews; to the Study Programme Assessment; and, when they have graduated, to the Graduate Surveys;
- As members of Subject Area Teams and Board of Studies, which approve changes to study programmes originating from student evaluations (see process ApproveCourse-LevelChanges) or employers' panels (see process ApproveGBI-DIMChanges etc.) or Quality Status Meetings (see process ApproveProgramme-LevelChanges); and decide the course portfolio (see process RollCoursePortfolio).
- As members of the ITU Board of Directors, student participate in the discussing the Portfolio Report and the Executive Employers' Panels' report and supervising Executive Management concerning follow-up on these reports (see process BoardDiscussion); and the approval of the University's budget (see process BudgetApproval).

Robustness (of Manning and of Realisation of Programme Learning Outcomes under Changes)

Although every course has a single person as course manager, courses must be designed to fit the rest of the study programme. Changes to a course must not bring the entire study programme out of alignment with learning objectives of the entire study programme, as described in the Curriculum Document, nor must it restrict the number of persons who can teach any mandatory course to just one active researcher (see 2.7).

Strategy Concerning Diversity of Student Population on MSc Programmes

ITU's MSc programmes contain tracks that are designed for students from a variety of bachelor programmes. ITU has the following quality policy for diversity of MSc students on such tracks:

- 1) All MSc programmes shall have different admission tracks requiring different sets of qualifying degrees;
- 2) The university must maintain a mapping of the learning objectives described in the Curriculum Document to the qualification framework, to ensure that, for all admission tracks, the level is MSc level (see 2.4);
- 3) Admission procedures must ensure that the admitted students have the skills required to start the program (see 1.2);
- 4) In first semester activities with students of diverse backgrounds, the university must ensure that

the teachers are aware of and have the right knowledge and didactic tools to address the diversity (see 2.3);

- 5) Systematic follow-up is performed on how the diversity of backgrounds influence Primary Quality Data (see 2.3).

2.1 Quality Standard

Student Evaluation of Courses and Projects/Theses and of entire Study Programmes

Terminology	<p>IT University of Copenhagen has in its course evaluation a line of <i>quantitative questions</i>, which, in addition to overriding student satisfaction, ask whether the student experiences close alignment between the course contents and the teaching goals; whether there is a close alignment between teaching goals and examination types; and whether the student finds the course relevant to his or her future job profile.</p> <p>In addition, students evaluate student projects and entire study programmes.</p>
Predicate	<ol style="list-style-type: none"> 1. The average of the answers from the students to the quantitative questions in the course evaluation score is greater than or equal to 4.75 (on a scale from 1 to 6) on all programmes. 2. The average score of the answers from the students to the quantitative questions in the programme evaluation is greater than or equal to 4.75 (on a scale from 1 to 6). 3. The average score of the answers from the students to the quantitative questions in the evaluation of final projects is greater than or equal to 4.75 (on a scale from 1 to 6). 4. The average score of the answers from the students to the quantitative questions in the evaluation of other projects is greater than or equal to 4.75 (on a scale from 1 to 6).
Responsible	Head of Study Programme
(Quality) Work Process	<ol style="list-style-type: none"> 1. CourseEvaluation (which follows up on both qualitative and quantitative data collected from students) 2. -4. The evaluations process describes how to systematically evaluate and follow up on all ITU study programmes and projects on those programmes. All evaluations will be carried out twice a year. An external supplier carries out the evaluations. Procedures for follow-up are based on the results of the evaluations (reports), which are distributed by the Student Affairs and Programmes to Education Group, Head of programmes, individual supervisors and other stakeholders in the organization.
Place of record	Study Programme Report
Alarm Handling Process	<p>Recommendations</p> <ol style="list-style-type: none"> 1. Identify where the issues are located, e.g. single course, single teacher, single cohort, or prevalent across the programme. 2. Identify whether the issue lies in learning objectives or in the teaching. 3. Develop an action plan for how to handle issues. The Course Manager or the Subject Area Team follows up on issues concerning learning objectives. The relevant Head of Section follows up on issues concerning personnel management.

2.2 Development Goal	
Completion Times for BSc and MSc students	
Predicate	<ol style="list-style-type: none"> IT University of Copenhagen will reduce the average exceeding of time of study for its graduates in 2015 with 0.5 month compared to 2011; 1 month in 2016 compared to 2011 and 1.6 month in 2017 compared to 2011. Every programme meets its specific targets concerning reduction in study times.
Responsible	<ol style="list-style-type: none"> Head of Studies Head of Study Programme
(Quality) Work Process	<ol style="list-style-type: none"> PortfolioReport; StudyProgrammeReport
Place of record	<ol style="list-style-type: none"> Education Portfolio Report Study Programme Report
Actions in case the goal is not met	<ol style="list-style-type: none"> Follow up on the action plans of Heads of Study Programmes (see 2c below) and document findings in the Education Portfolio Report. Individual programme: <ol style="list-style-type: none"> Identify where the issues are located, e.g. single course, single cohort, or prevalent across the program. Identify if the issue lies in the learning objectives or in the teaching. Develop an action plan for how to handle issues. The Subject Area Team follows up on issues concerning learning objectives. The relevant Head of Section follows up on issues concerning personnel management.

2.3 Quality Standard	
Diversity of Students on MSc Programmes	
Terminology	To enable measurements and follow-up on diversity, we distinguish between the following admission categories of students: Applicants from ITU; Applicants from Danish University (Not ITU and not a Danish Professional Bachelor degree); Applicants from Foreign University; and Applicants with a Danish Professional Bachelor degree; and Others (including some degrees under the Ministry of Culture and education within the police and the armed forces).
Predicate 1	None of the admission categories systematically fall below the average of the other categories in some of the Primary Quality Data b) og g) – concerning progress and employment, respectively.
Predicate 2	Before each semester, a workshop on coordination and pedagogics for each programme is held. The workshop addresses diversity and background of new cohorts and, for MSc programmes, is attended by both the Head of the MSc programme and the Head of the associated BSc programme.
Responsible	Head of Study Programme
(Quality) Work Process	<ol style="list-style-type: none"> (ad Predicate 1) StudyProgrammeReport (ad Predicate 2) SemesterWorkshopAutumn and SemesterWorkshopSpring
Place of record	<ol style="list-style-type: none"> (ad Predicate 1) Study Programme Report (ad Predicate 2) Minutes from semester workshops
Alarm Handling Process	<ol style="list-style-type: none"> (ad Predicate 1) Problem must be analysed and a proposal must be developed to remedy either the curriculum or the admission procedure (mandatory) (ad Predicate 2) The Education Group tasks the Head of Department with follow-up (mandatory).

2.4 Quality Standard	
Qualification Framework and Progression	
Summary	The university must ensure that all its study programmes live up to the requirements of the Danish qualification framework.
Terminology	<p>The (Danish) qualification framework has different requirements for different levels of study programmes (BSc, MSc and Master). MSc study programmes have more than one admission track and more than one specialisation. A <i>Qualification Framework Mapping</i> is a mapping showing 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 study programme. For study programmes that have no specialisations and only one admission track (typically Bachelor programmes), a Qualification Framework Mapping consists of two maps, namely</p> <ol style="list-style-type: none"> 1. a map from the objectives for learning output (as described in the Curriculum Document) against the qualification framework requirements of the level of the study programme; and 2. a map from the objectives for the learning output of the programme to the non-elective study activities of the study programme, each course activity listed with the relevant part of its intended learning outcomes. <p>For MSc study programmes, which have more than one admission track and more than one specialisation, the Qualification Framework Mapping considers every path of non-elective study activities from admission to a specialisation permitted by the Curriculum Document.</p>
Predicate	<ol style="list-style-type: none"> 1) For every study programme, there exists a Qualification Framework Mapping, which is regularly reviewed; and 2) For every study programme and for every path through the study programme which the Curriculum Document permits, the Qualification Framework Mapping shows that <ol style="list-style-type: none"> a. The objectives for learning outputs which the Curriculum Document associates with that path cover the (Danish) qualification framework requirements; and b. The intended learning outcomes of the study activities that constitute the path cover the objectives for learning outputs that the Curriculum Document associates with that path.
Responsible	Head of Study Programme
(Quality) Work Process	SemesterWorkshopSpring and SemesterWorkshopAutumn
Place of record	Qualification Framework Mappings, which are stored in F2
Alarm Handling Process	Mandatory: The Subject Area Team must change the study programme to eliminate the shortcoming.

2.5 Quality Standard	
Balance between VIP and DVIP in teaching	
Summary	ITU is gradually going to increase the ratio of teaching carried out by researchers to teaching carried out by external lecturers, while maintaining that up to 25 % of the teaching should be delivered by external lecturers.
Terminology	<p>Let S be a set of study activities on a programme in a given period. For each study activity s in S, let s_e be the ECTS point size of the activity. Further, let s_v be the percentage of s taught by VIP and similarly, let s_d be the percentage of the activity taught by DVIP (note that s_v + s_d = 100%). Finally, let s_n be the number of student registered on the activity. We then define the VIP/DVIP ratio for the programme in that period relative to S as follows:</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> $\text{VIP/DVIP ratio}(S) = \frac{\sum_{s \in S} (s_e \times s_v \times s_n)}{\sum_{s \in S} (s_e \times s_d \times s_n)}$ </div> <p>that is, the total volume of student activities taught or supervised by active researchers divided by the total volume of student activities taught or supervised by DVIP.</p>
Predicate	For ITU as a whole, the VIP/DVIP ratio is at least 2.22 in 2015, at least 2.44 in 2016, at least 2.70 in 2017 and at least 3.00 in 2018. In 2014, the VIP/DVIP ratio was 2.19. Moreover, no study programme must have a VIP/DVIP ratio of less than 80 % of the lower limit for the institutional VIP/DVIP-ratio for the year in question.
Responsible	Head of Department
(Quality) Work Process	CourseManning. Key to the increase of the VIP/DVIP-ratio is the rolling four-semester planning of recruitment and course manning, see [19] for details.
Place of record	Study Programme Report
Alarm Handling Process	<p>Mandatory:</p> <ul style="list-style-type: none"> Alarms must be recorded in the Study Programme Report. After every semester, the Department Management discuss the manning of study programmes that are in breach of the VIP/DVIP quality standard and produce a plan for how to prevent the issues from arising again. In case of recurrence - that is, the same issue being logged two years in a row, the head of programme is asked to propose a change to the curriculum in collaboration with the Department to solve the issue.

2.6 Quality Standard	
Research-based Course Design and Supervision	
Predicate	<ol style="list-style-type: none"> Every part-time lecturer who holds the role of course manager is associated with an active researcher employed at ITU, who can assist the part-time lecturer with course design; including planning of intended learning outcomes; learning activities and exam form (cf. item 1 listed under the Policy Statements concerning Research-Based Teaching); AND For every employment of a part-time lecturer as course manager, there exists a documented reason for this allocation of role which adheres to item 2 listed under Policy Statements concerning Research-Based Teaching; AND Every final project and thesis is supervised by an active researcher, but for certain rare cases. This applies to Master, BSc and MSc-level.
Responsible	<ol style="list-style-type: none"> Heads of Section are responsible for appointing an active researcher for each course which has a part-time lecturer as course manager; AND

	<p>2. The Head of Department is responsible for ensuring that reasons for assigning part-time lecturers course manager responsibility adhere to the policy statement and are documented with the Course Manning Map; AND</p> <p>3. Heads of Study Programme are responsible for checking that lists of supervisors whom the students can choose between contains active researchers only.</p> <p>Moreover, Heads of Study Programme report on the fulfilment or otherwise of all three parts of the predicate in the Study Programme Reports.</p>
(Quality) Work Process	<p>1. RollCourseManningMap</p> <p>2. RollCourseManningMap</p> <p>3. The student project registration software distinguishes between whether a person is approved to supervise at BSc, Master or MSc level. Moreover, as part of the process of project agreement approval, Student Affairs and Programmes manually check whether proposed supervisors are already approved to supervise projects at the level in question and present proposals for changing the supervision rights of teachers for the approval of the Head of Study Programme. Moreover, the Head of Study Programme documents supervisor rights granted subject to item 6 in the policy concerning Research-Based Teaching.</p>
Place of record	<p>1. Course Manning Map</p> <p>2. Comments on the Course Manning Map (kept with the Course Manning Map)</p> <p>3. Study Programme Report</p>
Alarm Handling Process	<p>Mandatory:</p> <p>To ensure feedback into the hiring system, and to allow follow-up on the research base of our programmes, all deviations from the predicate must be logged in the Education Portfolio Report. If it is related to the use of a part-time lecturer, it must further be logged</p> <ol style="list-style-type: none"> Whether the part-time lecturer is an active researcher at another research institution Which of the allowed purposes for the use of a part-time lecturer is involved. <p>The Head of Department is responsible for finding better solutions for the following semesters as well as taking the feedback into the hiring system.</p>

<p>2.7 Quality Standard</p> <p>Robustness (of Manning and of Realization of Programme Learning Objectives under Changes)</p>	
Terminology	The Department Management maintains a <i>Course Manning Map</i> , i.e, a map from courses to sets of faculty who will or can teach that entire course.
Predicate	<p>1. Every course and part of a course which is mandatory for some students can be taught by at least two VIP.</p> <p>2. Every change of a course (or introduction of a new course) is checked for consistency with the overall structure and learning objectives of the study programme, as defined in the Curriculum Document.</p>
Responsible	Department Management
(Quality) Work Process	<p>CourseManning.</p> <p>Notes: The Head of Study Programme assesses whether there are mandatory courses that can only be taught by less than two VIP and reports such cases in the Study Programme Report, for the subsequent follow-up of the Department Management.</p> <p>The relevant Subject Area Team must approve changes to the course portfolio which</p>

	have any bearing on other courses or on compliance with the overall learning objectives of the programme. The Subject Area Team must document why it considers the change to be consistent with the overall structure and learning objectives of the study programme, as defined in the Curriculum Document (or else raise an alarm).
Place of record	Robustness of manning: Using the Course Manning Map, the Department Management checks whether every course can be taught by at least two members of faculty (see description of process RollCourseManningMap for details.) Alarms are recorded in Study Programme Report. Robustness of realization of programme learning objectives: Both arguments for changes that the Subject Area Team considers sound and alarms concerning changes that the Subject Area Team finds to be in breach of the Quality Standard are recorded in Minutes from Subject Area Team meetings, flagged as a curriculum change agenda item, so that it can be identified as such.
Alarm Handling Process	Mandatory: The course portfolio must be changed or a co-teacher assigned to the course to eliminate the weakness.

2.8 Quality Standard	
Completion Rates for BSc and MSc students	
Terminology	Completion of bachelor and MSc studies within scheduled time plus one year is defined in the statistical framework ("statistisk beredskab") of Universities Denmark , indicators G1.2 and G2.2, respectively.
Predicate	1. Completion within scheduled time plus one year is at least 70 % for students enrolled as full-time students at ITU. 2. Every full-time programme satisfies that completion within scheduled time plus one year is at least 70 %.
Responsible	1. Head of Studies 2. Head of Study Programme
(Quality) Work Process	1. PortfolioReport; 2. StudyProgrammeReport
Place of record	1. Education Portfolio Report 2. Study Programme Report
Alarm Handling Process	1. Follow up on the action plans of Heads of Study Programmes (see 2c below) and document findings in the Education Portfolio Report. (Mandatory) 2. Mandatory: Individual programme: <ul style="list-style-type: none"> a. Identify where the issues are located, e.g. single course, single cohort, or prevalent across the program. b. Identify whether the issue lies in learning objectives or in the teaching. c. Develop an action plan for how to handle issues. The Subject Area Team follows up on issues concerning contents. The relevant Head of Section follows up on issues concerning personnel management.

2.9 Quality Standard	
Contact and Feedback (Bachelor and MSc courses)	
Terminology	One ECTS of study should correspond to 27 hours of work for the student, who earns the

	credit.
Predicate	For every course which is mandatory for some students on some Bachelor or MSc programme, teachers on the course (including Teaching Assistants) must spend in total at least 20 minutes weekly (on average) with students registered on the course (not including breaks) for each ECTS of the course during the semester (14 weeks in autumn, 14 weeks in spring). This corresponds to 3 times 50 minutes of contact time weekly for a 7.5 ECTS course.
Responsible	Head of Department
(Quality) Work Process	CourseManning (using data from course descriptions)
Place of record	Study Programme Report
Alarm Handling Process	Mandatory: Research & Learning Support must raise alarms to the Head of Department, when the predicate is violated. Alarms must be recorded in the Study Programme Report. After every semester, the Department Management discuss courses that have been found to offer too little contact with students and produce a plan for how to prevent the issues from arising again.

2.10 Quality Standard	
Constructive Alignment	
Summary	All courses are designed according to the Constructive Alignment principles .
Predicate	New/changed course descriptions are not finalised unless they have been approved by Research & Learning Support. Every semester, before course start, Research & Learning Support check the following: <ul style="list-style-type: none"> - Intendend Learning Outcome (ILO) description is written according to the SOLO taxonomy; - ILOs, planned Learning Activities and Exam Forms are aligned
Responsible	Research & Learning Support
(Quality) Work Process	Before the beginning of each semester, Research & Learning Support check all course descriptions. In cases where the ILOs are not consistent with the SOLO taxonomy or in cases where ILOs planned Learning Activities and Exam Forms are not in alignment, Research & Learning Support have an e-mail correspondence or a one-to-one meeting with the Course Manager, who then modifies the course description for the approval of Research & Learning Support. If Research & Learning Support cannot approve a course description, they inform the relevant Head of Study Programme in writing.
Place of record	Study Programme Report
Alarm Handling Process	Mandatory: The Head of Study Programme records cases of unapproved course descriptions in the Study Programme Report, for the consideration of the Education Group.

2.11 Quality Standard	
Teacher Competence Development Programme	

Summary	All teachers take part in the Teacher Development Programme.
Terminology	The Teacher Development Programme is mandatory for all assistant professors at ITU. Part of the programme – the one day Exam Seminar on qualitative aspects of exams and exam regulations – is mandatory for all teachers (including External Lecturers) at ITU. The Introductory Teacher Development Programme for PhDs is mandatory for all PhD students. The Introduction to Teaching day is mandatory for all new teachers.
Predicate	As of February 1st (of the year of this Quality Policy), <ol style="list-style-type: none"> 1. All assistant professors have been signed up for the Teacher Development Programme (Danish: “adjunktpædagogikum”) unless they can document to have already completed a similar programme; and 2. All teachers have been signed up for the Exam Seminar unless they are exempted by the Head of Section; and 3. All PhD students who are teaching in a given semester have been signed up for the Introductory Teacher Development Programme for PhDs, unless they can document to have completed a similar programme elsewhere or are exempted by the Head of Section; and 4. All new teachers have been signed up for the Introduction to Teaching day.
Responsible	Head of Department
(Quality) Work Process	Every semester, Research & Learning Unit identify assistant professors, teachers and PhD students who have not already taken part in a required Teacher Development Programme activity and sign them up as participants.
Place of record	Competence Development Plan (F2 case maintained by Research & Learning Support, containing work documents concerning items 1 – 4.)
Alarm Handling Process	Mandatory: In case assistant professors fail to start or complete the Teacher Development Programme, teachers fail to attend the Exam Seminar, or in case PhD students fail to start or complete the Introductory Teacher Development Programme for PhDs, Research & Learning Support record the breach of the quality standard in the Teacher Development Programme Plan and pass on to the relevant Section head the task to investigate the case and take measures to get the assistant professor/teacher through the required development activities.

2.12 Quality Standard	
Drop Out (Bachelor and MSc)	
Terminology	The drop out rate is defined as the rate of the admitted students who dropped out within the first 13 months of their studies, where only students who were still enrolled after their first month of studies are counted as admitted.
Predicate	<ol style="list-style-type: none"> 1. The drop-out rate of bachelor students is at most 20 % 2. The drop-out rate of MSc students is at most 20 %
Responsible	<ol style="list-style-type: none"> 1. Heads of Study Programme (Bachelor programmes) 2. Heads of Study Programme (MSc programmes)
(Quality) Work Process	StudyProgrammeReport
Place of record	Study Programme Report

Alarm Handling Process	Mandatory: Whenever a study programme breaches the standards, 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 of the result, upon which the Education Group decides the further follow-up actions.
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3 Relevance and Employability

Context for the Quality Policy Area (based on ITU Strategies and ITU's Development Contract)

From ITU's Education Strategy[2]:

- ITU wants its programs to give its students the competences needed for the future job market.

From the ministerial development contract[3]:

1. **Employment**

The unemployment of the graduates graduating from the IT University of Copenhagen from 4 to 7 quarters earlier will in 2015 be 14 per cent at the most; in 2016 be 13 per cent at the most and in 2017 be 12 per cent at the most;

2. **Private Sector**

The quota of IT University of Copenhagen MSc graduates graduating from 0 to 10 years ago and working in the private sector must be at least 75 per cent of the employed graduates. This goes for each year of the period of the contract (see 3.3);

3. **Global Competences**

The profile of global competences and related activities of the Bachelor and Master programmes are evaluated each year of the period of the contract and a plan of actions is made for the following year. The Head of Studies must approve these action plans (see 3.5).

3.1 Quality Standard

Design for Employability (Bachelor, MSc and Master)

Terminology	An <i>employment ticket</i> for a study programme is something difficult and in demand in the labour market that all graduates of that study programme master. (In the case of part-time programmes, the students are often already employed, but the definition still makes sense.)
Predicate	For every study programme, there exists a description, approved by the relevant programme-specific employers' panel no more than two years ago, of at least one "employment ticket".
Responsible	Head of Study Programme
(Quality) Work Process	EmploymentTickets
Place of record	The description is stored in the archive of the employers' panel. The approval (or rejection) is recorded in the minutes from Employers' Panel meeting.

Alarm Handling Process	<p>Mandatory:</p> <ol style="list-style-type: none"> 1) If the description does not exist, the Head of Study Programme is responsible for developing one; similarly, if the description is no longer up-to-date, the Head of Study Programme is responsible for updating it; 2) If a description exists but has not been approved by the programme-specific employers' panel, the Head of Study Programme is responsible for negotiating any changes with the employers' panel and presenting the description for the approval of the employers' panel within six months.
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<h3>3.2 Quality Standard</h3> <h4>Actual Employability (Bachelor and MSc)</h4>	
Terminology	In 2015, the Minister for Higher Education and Science introduced an admission limits model (Danish: "dimensioneringsmodel") which put limits on admission into study programmes whose graduates have gross unemployment two percentage points or more over the national average (measured in quarters 4 to 7 after graduation).
Predicate	The national dimensioning model affects no full-time program at ITU.
Responsible	Head of Study Programme
(Quality) Work Process	StudyProgrammeReport
Place of record	Study Programme Report
Alarm Handling Process	<p>Mandatory:</p> <p>The procedure is to examine whether the Study Programme has become misaligned with the job-market.</p> <ol style="list-style-type: none"> 1. Put the issue on the agenda for the next employers meeting for this program, in particular to ensure that the employment tickets are still valid and that the market for the graduates in question is not too small to justify the number of students admitted. <p>In addition, some of the following action can be taken (recommendations):</p> <ol style="list-style-type: none"> A. Conduct focus group interview with a handful of new alumnae; B. Draw a deeper statistic splitting the unemployment on the bachelor background of graduates; C. Study of the latest alumnae survey paying attention to issues that might be related to unemployment; D. Conduct focus group interview with relevant external lecturers within the programme; E. Raise the issue at a student meeting to get student input to the issue. <p>This analysis, the findings, and a possible action plan are submitted to the education group in the next Study Programme Report. The report must address the alignment of the Study Programme to the labour market.</p> <p>In case of repeated failure, it is suggested to do some of the following:</p> <ol style="list-style-type: none"> a) Perform a new alumnae survey to uncover details of the issue b) In collaboration with faculty, management, the programme-specific employers' panel and the executive-level employers' panel, to review whether the study

	<p>programme needs to be changed to increase the segment of the labour market it addresses.</p> <p>c) Conduct a focus group interview with the unions mostly representing the unemployed graduates.</p> <p>An analysis, the findings and a possible action plan must be submitted to the Education Group in the next Study Programme Report. In the report, it must be addressed whether there is a need for downsizing the program, or for major changes to the Study Programme (major for example being the need for new research areas to cover new elements of the program).</p>
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3.3 Development Goal	
Private Sector Employment (MSc)	
Terminology	The quota of IT University of Copenhagen MSc graduates graduating from 0 to 10 years ago and working in the private sector is calculated yearly by the Ministry of Higher Education and Science.
Predicate	<ol style="list-style-type: none"> For ITU as a whole, the quota of IT University of Copenhagen MSc graduates graduating from 0 to 10 years ago and working in the private sector, must be at least 75 per cent of the employed graduates. This goes for each year of the period of the development contract. For each study programme, the study programme meets the quality standards agreed annually between the Head of Department and the Head of Study Programme concerning private sector employment.
Responsible	<ol style="list-style-type: none"> Head of Studies Head of Study Programme
(Quality) Work Process	<ol style="list-style-type: none"> PortfolioReport StudyProgrammeReport
Place of record	<ol style="list-style-type: none"> Education Portfolio Report Study Programme Report
Actions in case the goal is not met	<p>Mandatory:</p> <ol style="list-style-type: none"> The Head of Studies develops an action plan. Developing the plan must include a formal hearing, in which the executive-level employers' panel comments on the plan. The Head of Study Programme develops an action plan. Developing the plan must include a formal hearing, in which the relevant programme-specific employers' panel comments on the plan.

3.4 Quality Standard	
Interaction with Employers' Panels (BSc, MSc and Master)	
Terminology	ITU has seven programme-specific and one executive-level employers' panel covering a total of ten study programmes.
Predicate	<ol style="list-style-type: none"> ITU follows up on the recommendations of the employers' panels; AND The Employers' Panels find that ITU follows up on their recommendations

Responsible	1. Head of Study Programme (for programme-specific employers' panels) and Head of Studies (for executive-level employers' panel) 2. Chairmen of the Employers' Panels
(Quality) Work Process	1. StudyProgrammeReport and PortfolioReport 2. EmployersPanelMeeting and ExecLevelEmployersPanelMeeting
Place of record	1. Study Programme Report and Education Portfolio Report, respectively 2. Programme-specific Employers' Panel Reports from the Executive-Level Employers Panel Reports, respectively.
Alarm Handling Process	Mandatory: a) If the breach is in a programme-specific employers' panel: The Head of Study Programme develops an action plan for the approval of the Head of Studies. b) If the breach is in the executive-level employers' panel: The Vice Chancellor develops an action plan for the approval of the chairman of the Board of Directors.

3.5 Quality Standard
Global Competence Profile (MSc and BSc)

Predicate	The profile of global competences and related activities of the Bachelor and MSc programmes are evaluated each year of the period of the development contract and a plan of actions is made for the following year.
Responsible	Head of Study Programme
(Quality) Work Process	StudyProgrammeReport
Place of record	The evaluation is made by the Head of Study Programme and recorded in the study programme report. The approval by the Head of Studies of the action plan is part of the Education Group's approval process.
Alarm Handling Process	Recommendation: If the Head of Studies cannot approve the action plan or the follow-up on previous plans, the Head of Study Programme appears before the Education Group with a revised plan.

Approval and Signatures	<p>The Quality Policy was approved by Executive Management on</p> <p>date</p> <p>30 Nov. 2015</p> <p></p> <p>Mads Tofte Vice Chancellor</p> <p></p> <p>Georg Dam Steffensen University Director</p>
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A Appendix Definitions of Primary Quality Data Global Competence Profile (MSc and BSc)		
Name	Definition	Notes
Origin of applicant	A classification of the institution which has granted the degree based on which the applicant seeks admission. Can take one of five values: <ol style="list-style-type: none"> 1. ITU 2. Other Danish University 3. Foreign University 4. Danish Professional Bachelor's degree 5. Other Some Danish universities grant professional bachelor's degrees; these are counted under item 4 only.	
Number of applicants, year N	Number of applicants for start on Feb. 1 st year N or Sep. 1 st year N	Appears as Primary Quality Data in reports produced year $N+1$. Calculated by Analysis Dept.
Number of applicants offered admission, year N	Number of applicants offered admission for start on Feb. 1 st year N or Sep. 1 st year N	Appears as Primary Quality Data in reports produced year $N+1$. Calculated by Analysis Dept.
Number of students admitted after early dropout, year N	Number of students admitted after early dropout, enrolled as of Feb. 1 st year N or Sep. 1 st year N	Appears as Primary Quality Data in reports produced year $N+1$. Calculated by Analysis Dept.
Dropout after first year, year N	(Number of students who were admitted on Feb 1 st year $N-1$, were still enrolled on March 1 st year $N-1$ but were not still enrolled on March 1 st year N) + (Number of students who were admitted on Sept. 1 st year $N-1$, were still enrolled on Oct 1 st year $N-1$ but were not still enrolled on Oct 1 st year N)	Appears as Primary Quality Data in reports produced year $N+1$. Calculated by Analysis Dept. The definition is taken from Universities Denmark, who use the concept in their benchmarking of the universities (Danish: "statistisk beredskab").
Average graduate delay, compared to curriculum schedule, year N	Average study time minus curriculum scheduled study time for those who graduated between Oct 1 st year $N-1$ and Sep 30 th year N	Appears as Primary Quality Data in reports produced year $N+1$. Calculated by Analysis Dept.
Completion rate within schedule plus one year, year N (%)	Bachelor Programmes The <i>base population</i> for year N consists of the students who were enrolled Sep 1 st year $N-4$ and were still enrolled on Oct 1 st year $N-4$. The completion rate within schedule plus one year, year N , is the ratio of the base population for year N that has passed some bachelor degree	Appears as Primary Quality Data in reports produced year $N+1$. Calculated by Analysis Dept. The definition is taken from Universities Denmark, who use the concept in their benchmarking of

	<p>from ITU when measured on Oct 1st year <i>N</i>.</p> <p>MSc Programmes The <i>base population</i> for year <i>N</i> consists of the students who were enrolled on Feb 1st year <i>N</i>-3 or Sep 1st year <i>N</i>-3 and were still enrolled on Oct 1st year <i>N</i>-3. The completion rate within schedule plus one year, year <i>N</i>, is the ratio of the base population for year <i>N</i> that has passed some cand. It. degree from ITU when measured 3 years and one month (i.e., 1st March or 1st October, year <i>N</i>) after their admission.</p>	<p>the universities (Danish: “statistisk beredskab”).</p>
<p>VIP/DVIP ratio in year <i>N</i></p>	<p>“VIP” (Danish: “videnskabeligt personale”) stands for active researchers while DVIP (Danish: “deltidsansat videnskabeligt personale”) stands for lecturers that do not have research obligations, including part-time lecturers.</p> <p>Let <i>S</i> be a set of study activities on a programme in a given period. For each study activity <i>s</i> in <i>S</i>, let <i>s_e</i> be the ECTS point size of the activity. Further, let <i>s_v</i> be the percentage of <i>s</i> taught by VIP and similarly, let <i>s_d</i> be the percentage of the activity taught by DVIP (note that <i>s_v</i> + <i>s_d</i> = 100%). Finally, let <i>s_n</i> be the number of student registered on the activity. We then define the VIP/DVIP ratio for the programme in that period relative to <i>S</i> as follows:</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> $\text{VIP/DVIP ratio}(S) = \frac{\sum_{s \text{ in } S} (s_e \times s_v \times s_n)}{\sum_{s \text{ in } S} (s_e \times s_d \times s_n)}$ </div> <p>that is, the total volume of student activities taught or supervised by active researchers divided by the total volume of student activities taught or supervised by DVIP.</p> <p>The VIP/DVIP ratio in year <i>N</i> is calculated by the Analysis Department and occurs in reports that are produced in year <i>N</i>+1.</p>	
<p>Average score, quantitative questions, course evaluation, in year <i>N</i></p>	<p>IT University of Copenhagen has in its course evaluation a line of <i>quantitative questions</i>, which, in addition to overriding student satisfaction, ask whether the student experiences close alignment between the Intended Learning Outcomes, Learning Activities and Assessment Forms; and whether the student finds the course relevant to his or her future job profile.</p> <p>Quantitative questions are on a scale from 1 to 6, 6 being the highest score.</p>	<p>The analysis department calculates the averages for each study programme and for ITU as a whole, based on data in the course evaluation system.</p> <p>The averages for evaluations conducted in year <i>N</i> appear as Primary Quality Data in reports produced in year <i>N</i>+1.</p>
<p>Average score, quantitative</p>	<p>IT University of Copenhagen has in its evaluation of theses/final projects</p>	<p>The analysis department calculates the averages for each study programme</p>

questions, course evaluation, in year <i>N</i>	and entire study programmes a line of <i>quantitative questions</i> . Quantitative questions are on a scale from 1 to 6, 6 being the highest score.	and for ITU as a whole, based on data in the results of evaluating theses/final projects and entire study programmes. The averages for evaluations conducted in year <i>N</i> appear as Primary Quality Data in reports produced in year <i>N</i> +1.
Lessons taught on course activities on study programme in year <i>N</i>	For each full-time study programme, a so-called <i>normal study path</i> (Danish: “normalstudieforløb” is defined.) The lessons taught on course activities on the study programme in year <i>N</i> is the number of lessons taught during year <i>N</i> on the courses which are part of the normal study path on that study programme.	This definition is taken from the lesson registration (Danish: “timetalsregistrering”) which ITU reports to the Ministry for Higher Education and Technology every December, starting with a pilot in December 2014. The lessons taught on course activities in year <i>N</i> appear as Primary Quality Data in reports produced during year <i>N</i> +1.
Numbers of graduates, year <i>N</i>	Number of students who graduated between Oct. 1 st year <i>N</i> -1 and Sept. 30 th year <i>N</i> .	Calculated by the Analysis Department. Appears as Primary Quality Data in reports produced year <i>N</i> +1.
Unemployment rate during the second year after graduation in year <i>N</i> (per cent)	Unemployment rate is measured as the proportion of hours a person is unemployed in a quarter with a normal expected working period of 37 hours per week. An unemployment rate of 0.010 is equivalent to 10 per cent of the graduates have been unemployed in a quarter. Unemployment rate second year after graduation in year <i>N</i> is the average unemployment rate four to seven quarters after graduation, among students who graduated between Oct. 1 st year <i>N</i> -1 and Sept. 30 th year <i>N</i> .	The definition is taken from the Ministry for Higher Education and Technology, who in year <i>N</i> compute the unemployment rate during the second year after graduation in year <i>N</i> -3.
Private sector employment last 10 years (per cent), year <i>N</i>	Ratio of those graduates who are employed and graduated between 0 and 10 years ago who are employed in the private sector (per cent).	The definition is taken from the ministerial audit report (Danish “tilsynsrapport” for 2014). The development contact contains an assumption saying that the Ministry will compute this ratio and inform ITU about the number no later than March 1 st every year. The Ministry has confirmed that they intend to continue calculating the ratio (see F2 case 2016-1612, Id 187907)

Appendix B Excerpt of Annual Wheel for 2016

The following is an excerpt of the annual wheel for 2016 showing when processes concerning the first of the two yearly course evaluations start and finish, respectively. A computer generated this excerpt from [the specification of CourseEvaluation](#). See [19] for the full annual wheel.

Date	Responsible	Event	Result	Result type
01-04-2016	Students	CompleteCourseEvaluation Questions(Apr1_103)		
14-04-2016	Students	...CompleteCourseEvaluation Questions(Apr1_103)	a_166	Scores and Comments
15-04-2016	Teachers	RespondToStudentEvaluations(a_166)		
16-05-2016	Teachers	...RespondToStudentEvaluations(a_166)	b_167	Reactions From Teachers
09-05-2016	Teachers	ProposeCourseChanges(GBI, a_166, b_167)		
09-05-2016	Teachers	ProposeCourseChanges(DIM, a_166, b_167)		
09-05-2016	Teachers	ProposeCourseChanges(DMD, a_166, b_167)		
09-05-2016	Teachers	ProposeCourseChanges(DDK, a_166, b_167)		
27-05-2016	Teachers	...ProposeCourseChanges(GBI, a_166, b_167)	pch_168	Course-Level Changes Proposal
27-05-2016	Teachers	...ProposeCourseChanges(DIM, a_166, b_167)	pch_171	Course-Level Changes Proposal
27-05-2016	Teachers	...ProposeCourseChanges(DMD, a_166, b_167)	pch_174	Course-Level Changes Proposal
27-05-2016	Teachers	...ProposeCourseChanges(DDK, a_166, b_167)	pch_177	Course-Level Changes Proposal
30-05-2016	Subject Area Team(GBI)	ApproveCourse-LevelChanges(GBI, pch_168)		

30-05-2016	Subject Area Team(GBI)	ApproveCourse-LevelChanges(GBI, pch_168)		
30-05-2016	Subject Area Team(DIM)	ApproveCourse-LevelChanges(DIM, pch_171)		
30-05-2016	Subject Area Team(DMD)	ApproveCourse-LevelChanges(DMD, pch_174)		
30-05-2016	Subject Area Team(DDK)	ApproveCourse-LevelChanges(DDK, pch_177)		
17-06-2016	Subject Area Team(GBI)	...ApproveCourse-LevelChanges(GBI, pch_168)	ach_169	Minutes
17-06-2016	Subject Area Team(GBI)	...ApproveCourse-LevelChanges(DIM, pch_168)	ach_172	Minutes
17-06-2016	Subject Area Team(DMD)	...ApproveCourse-LevelChanges(DIM, pch_171)	ach_172	Minutes
17-06-2016	Subject Area Team(DMD)	...ApproveCourse-LevelChanges(DIM, pch_174)	ach_175	Minutes
17-06-2016	Subject Area Team(DDK)	...ApproveCourse-LevelChanges(DIM, pch_177)	ach_178	Minutes
20-06-2016	Teachers(GBI)	OrganiseCourse-LevelChanges(GBI, ach_169)		
20-06-2016	Teachers(DIM)	OrganiseCourse-LevelChanges(DIM, ach_172)		
20-06-2016	Teachers(DMD)	OrganiseCourse-LevelChanges(DMD, ach_175)		
20-06-2016	Teachers(DDK)	OrganiseCourse-LevelChanges(DDK, ach_178)		

15-08-2016	Teachers(GBI)	...OrganiseCourse-LevelChanges(GBI, ach_169)	och_170	Organised Course-Level Changes
15-08-2016	Teachers(DIM)	...OrganiseCourse-LevelChanges(DIM, ach_172)	och_173	Organised Course-Level Changes
15-08-2016	Teachers(DMD)	...OrganiseCourse-LevelChanges(DMD, ach_175)	och_176	Organised Course-Level Changes
15-08-2016	Teachers(DDK)	...OrganiseCourse-LevelChanges(DDK, ach_178)	och_179	Organised Course-Level Changes

The four sets of organised changed are then used as input the teaching in the spring of the subsequent year.