

Preamble of the Quality Policy	
Context for the Quality Policy	<p>At ITU, a study programme is said to be <i>ideal</i>, if [2, p. 6]</p> <ol style="list-style-type: none"> <li>1) it attracts a large number of well-qualified students; and</li> <li>2) the academic contents and the teaching are both world-class; and</li> <li>3) it gives the students the competences needed for the future job market.</li> </ol> <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 decided 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 assure and enhances quality.</p> <p>The day-to-day users of the Quality Assurance 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>
Scope of the Quality Policy	<p>The Quality Policy defines ITU's Quality Standards; 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 the so-called <i>Alarm Handling Processes</i>,</p>

	<p>i.e., the processes that are invoked upon discovery of breach of quality standards.</p> <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>To avoid redundancies and duplication of effort, the Quality Policy focusses on quality assurance. However, the reporting structure defined by the Quality Policy includes reporting on quality enhancement.</p> <p>The Quality Policy applies to all Bachelor, MSc and part-time programmes at ITU.</p>
Policy Areas	<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"> <li>1) Recruitment and Admission of Students</li> <li>2) Teaching and Learning Activities</li> <li>3) Graduates' Careers</li> </ol> <p>For each Quality Policy Area, we state in this Quality Policy:</p> <ol style="list-style-type: none"> <li>a) Relevant context in which the Quality Policy Area resides, e.g., relevant development goals;</li> <li>b) Definitions the quality standards for that area.</li> </ol> <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 / indicator.</p>
Responsibility	<p>The Vice Chancellor is responsible for the Quality Assurance Policy; the implementation of 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"> <li>• At regular intervals (which are defined in this Quality Policy), one must find out whether the standard is met or not</li> </ul>

	<ul style="list-style-type: none"> <li>• One must record the documentation showing that the standard/indicator is met or not at the place indicated in the Quality Policy</li> <li>• If the standard is not met, one must initiate (at least) the follow-up actions stated in the Quality Policy.</li> </ul> <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"> <li>• Predicate: a decidable, boolean predicate defining when the standard is met;</li> <li>• Responsible: reference to role or collegial body which is responsible, in the sense defined in this Preamble;</li> <li>• (Quality) Work Process: reference to or description of a process which contains the monitoring and follow-up actions of the standard;</li> <li>• Place of record: where is documentation of the fulfilment or otherwise of standard to be stored;</li> <li>• Alarm-handling Process: description of process describing what corrective steps will be taken in case the standard is <i>not</i> met, i.e., if the predicate of the standard is <i>false</i>.</li> </ul>
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"> <li>• Recruitment and Admission of Students <ul style="list-style-type: none"> <li>a) Recruitment and Admission (number of applicants, number of admission)</li> </ul> </li> <li>• Teaching and Learning Activities <ul style="list-style-type: none"> <li>b) For full-time studies: average delay, compared to curriculum schedule, and rate of students who complete within scheduled time plus one year</li> <li>c) Research-based teaching (VIP/DVIP-ratio)</li> <li>d) Course Evaluation Results</li> <li>e) Student Evaluations of Projects and Thesis</li> <li>f) Intensity of learning activities</li> </ul> </li> <li>• Graduates' Careers <ul style="list-style-type: none"> <li>g) Employment: gross unemployment of graduates 4 to 7 quarters after graduation (study programme, ITU, national average)</li> </ul> </li> </ul> <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</p>

	Science will continue to provide Primary Quality Data i) for ITU's full-time study programmes.
Reports and their Use	<p><b>The Study Programme Report</b></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 Group 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. The Study Programme Report contains:</p> <ul style="list-style-type: none"> <li>• Primary Quality Data for the study programme (provided by the Administration)</li> <li>• Follow-up on the action plan of the previous period;</li> <li>• Status of goals pertaining to the programme</li> <li>• Status of quality standards pertaining to the programme, including descriptions of follow-up actions initiated by standards that were not met;</li> <li>• A description of changes made to the curriculum with arguments for the changes and observed effects</li> <li>• A Description of changes made to the study programme as a results of recommendations made by the employers' panel</li> <li>• A SWOT-analysis for the study programme; and</li> <li>• An action plan for the quality work for the coming period.</li> </ul> <p>The Study Programme Report forms the basis of a recurring <i>Study Programme Quality Status Meeting</i> between the Head of Study Programme and the Education Group.</p> <p>Cycle time: 1 year.</p> <p><b>The Education Portfolio Report</b></p> <p>Based on the Study Programme Reports, the Education Group prepares an <i>Education Portfolio Report</i> and, after hearing the Board of Studies, submits the report to Executive Management. The report describes:</p> <ul style="list-style-type: none"> <li>• Successes of study programmes, including contributions to reaching development goals</li> <li>• Opportunities for the university</li> <li>• Threats and Weaknesses</li> <li>• 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.</li> <li>• Recommendations to Executive Management concerning the future of those study programmes that have breaches of quality standards.</li> <li>• Recommendations to Executive Management concerning how the quality system itself might be enhanced.</li> </ul> <p>Cycle time: 1 year.</p> <p><b>The Decision Memo</b></p>

	<p>Based on the Education Portfolio Report, Executive Management can decide</p> <ul style="list-style-type: none"> <li>• To reduce or increase admission numbers;</li> <li>• To terminate a study programme</li> <li>• To initiate the development of a new study programme</li> <li>• To make changes to the organisation of the quality system;</li> </ul> <p>Management document their decisions in a <i>Decision Memo</i>. Furthermore, the ITU Board of Directors read and discuss the Education Portfolio Report and question Executive Management about their follow-up actions.</p> <p>Cycle time: 1 year.</p> <p><b>The Programme-Specific Employers' Panel Report</b>  The Programme-Specific Employers panels [6] each write a <i>Programme-Specific Employers' Panel Report</i>, which they submit to the Executive-level Employers' Panel, cc the Heads of Study Programmes of the programmes in question, the Head of Studies 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. The alarm-handling actions on the Programme-Specific Employers' Panel Report are described in the standards listed in the Quality Area Policy for Graduates' Careers.</p> <p>Cycle time: 1 year.</p> <p><b>The Executive-Level Employers' Panel Report</b>  The Executive-Level Employers panel [7] writes an <i>Executive-Level Employers' Panel Report</i>, 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.</p> <p>Cycle time: 1 year.</p> <p><b>Programme Review Reports</b>  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 <i>Programme Review Report</i> [10], which it submits to ..., cc ... . The Programme Review Report serves as input to the writing of the Study Programme Report.</p> <p>Cycle time: 5 years (two study programmes are reviewed every year and there are currently 10 study programmes).</p> <p><b>Workplace Assessment ("Undervisningsmiljøundersøgelser")</b>  To be written. (Embed it in course evaluation actions)</p>
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(Quality) Work Processes	<p>By (Quality) Work Processes we mean documented work processes which play a role in the quality assurance work. We put the word Quality in parentheses to emphasise that we do not have a separate kind of work process for “quality work” but that, rather, quality assurance is 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 Assurance Policy are imbedded 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 (“årshjul”).</p> <p>Cyclic Processes are composed of smaller processes. Each process is owned by some role or collegial body. A process can have zero or more parameters and returns a result. A process can call a function, which is a job that is to be carried out by the owner of the process. Processes can call other processes. A process can have zero or more parameters and returns a result. Every function is specified with a maximal duration (in days). Processes can be composed in sequence and in parallel, making it possible to specify processes in a domain-specific language, <b>Proc</b>, we have devised for the purpose of specifying ITU’s (quality) work processes.</p> <p>In appendices to this Quality Policy, we include ITU’s (quality) work processes specified in <b>Proc</b>. Specifications in <b>Proc</b> are executable, so we also include a generic annual wheel computed by executing the specification. Readers who are not interested in the <b>Proc</b>-specification of the processes may want to read the annual wheel only, since it specifies the major yearly tasks and how information flows between them.</p>
Revision	<p>Executive Management review the Quality Policy every three years. In addition, Executive Management can at any time initiate revision of the Quality Policy or parts thereof and is obliged to do 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>Development goals and standards are revised once a year. 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>Executive Management decides on the creation and termination of study programmes, after discussion with the Board of Directors, and hearing of the Board of Studies, the Education Group and, in the case of termination, the relevant Employers’ Panel.</p> <p>Subject Area teams propose changes of existing study programmes to the Board of Studies for their approval. The Board of Studies cannot approve a change of the curriculum of an existing study programme unless the relevant</p>

	programme-specific employers' panel has approved accompanying descriptions of design for employability (see 3.1) and the Education Group has been heard.
References	<ol style="list-style-type: none"> <li>1. <a href="#">ITU Strategy 2012-2016</a></li> <li>2. <a href="#">ITU Education Strategy 2012-2016</a></li> <li>3. <a href="#">ITU's Development Contract</a></li> <li>4. <a href="#">European Standards and Guidelines</a></li> <li>5. <a href="#">The Danish Accreditation Institution: Institutional Accreditation (guide)</a></li> <li>6. Terms of Reference Programme-Specific Employers' Panels</li> <li>7. Terms of Reference Executive-Level Employers' Panel</li> <li>8. Concept for Review of ITU Study Programmes</li> <li>9. Template for Terms of Reference for Programme Reviews</li> <li>10. Template for Programme Review Report</li> <li>11. Role Description for Head of Study Programme</li> <li>12. Role Description for Head of Board of Studies</li> <li>13. Role Description for Head of Section</li> <li>14. Role Description for Head of Department</li> <li>15. Role Description for Vice Chancellor</li> </ol>
Transparency	<p>This document, the three accompanying Quality Policy Area documents and all documents listed under "References" are public documents, available through the Internet.</p> <p>The same applies to all 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.</p>
History	Executive Management, the Head of Studies and the Head of Department drafted and edited this document and the accompanying Quality Policy Area documents. The documents were 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.
Approval	The Quality Assurance Policy was approved by Executive Management on ....

## 2015 Quality Policy Area

### 1 Recruitment and Admission of Students

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

ITU wants to attract a large number of well-qualified students [2]<sup>1</sup>.

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].

#### ITU's Additional Policy Statements

In addition to mapping the curriculum to qualification framework, it is the policy for ITU MSc programs that:

1. For each admission track, those students we admit have the required skills to start the program
2. Each MSc head of programme keeps contact to the head of bachelor programs from which ITU receive a large number of applicants (e.g. biennial meetings).

#### 1.1 Quality Standard

##### Number of Students Admitted

Predicate	The Study Programme admits at least as many students as assumed in the 2015 budget
Responsible	Head of Study Programme
(Quality) Work Process	CheckAdmissionsOutcome
Place of record	Study Programme Report
Alarm Handling Process	<ol style="list-style-type: none"> <li>1) Investigate whether there are changes in the competitive situation which can explain the insufficient admission;</li> <li>2) Revisit red lights from previous Head of Studies report to see whether there are unresolved issues that could explain failing admission;</li> <li>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.</li> </ol>

#### 1.2 Quality Standard

##### Qualifications of Admitted Students

##### 1.2.1 Quality Standard

##### Well-qualified Students (MSc and Master degrees)

<sup>1</sup> References are listed in the Preamble of the Quality Policy.



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	Study Programme Report
Alarm Handling Process	<ol style="list-style-type: none"> <li>1) Quantify the extent of the phenomenon, preferably with a description of what weaknesses are observed;</li> <li>2) Consider what changes to the admission process would be necessary to eliminate the problem;</li> <li>3) Consider whether there are aspects of the programme itself that could be changed in order to attract more well-qualified students;</li> <li>4) Discuss with the Communications department whether the marketing of the programme needs to be changed to reach more well-qualified students.</li> </ol>

### 1.2.2 Quality Standard

#### Well-qualified Students (Bachelor degrees)

Predicate	No student was admitted with a grade point average below 7.0.
Responsible	Head of Study Programme
(Quality) Work Process	checkAdmissionsOutcome How will Heads of Study Programme be able to check the grade point averages of students admitted after early dropout?
Place of record	Study Programme Report
Alarm Handling Process	(same as in 1.2.1)

### 1.3 Quality Standard

ITU avoids rejecting well-qualified applicants on programmes for which employment rates are good.

Predicate	It is not the case that programme meets all employment standards and could have admitted 20 students more without breaking Quality Standard 1.2.
Responsible (Quality) Work Process	Head of Study Programme  checkAdmissionsOutcome
Place of record	Study Programme Report
Alarm Handling Process	<ol style="list-style-type: none"> <li>1. Head of Study Programme makes a written request to the Department Management for resources necessary for an expansion of the capacity;</li> <li>2. Department Management accepts or rejects the request at a Department Management Meeting 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 making its decision.</li> </ol>

## 2015 Quality Policy Area

### 2 Teaching and Learning Activities

Context for the Quality Assurance 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]<sup>1</sup>.

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 exercise tight control over the curriculum (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 external 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 external 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 external lecturers (see 2.5, 2.6).

The Education Strategy further states that

- External lectures should be used as a deliberate supplement (see 2.6).
- Learning must be student-centered and student-centered learning must be used to address the issue of student diversity in MSc programs (see 2.5).

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 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

<sup>1</sup> References are listed in the Preamble of the Quality Policy.

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 (policy stated below).

#### **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).

#### **Accreditation goals**

- 6. Ensuring the research base** (question 1,2,4 and 5 of the old criterion 2) (see 2.5, 2.6)
- 7. Ensuring pedagogic skills** of faculty (question 3 of the old criterion 2) (see 2.1, 2.3, 2.7)

#### **ITU's Additional Policy Statements**

##### **Research-Based Teaching**

ITU uses a numeric indicator, called the VIP/DVIP ratio<sup>2</sup>, to measure the ratio of student learning activities that had researchers as responsible over the number of student learning activities that had external lecturers as responsible. ITU has a quality standard for the VIP/DVIP ratio, which applies to all study programmes (see 2.5).

Moreover, ITU has a quality standard concerning ensuring that certain tasks and responsibilities are only carried out by research faculty (see 2.6)

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

Although every course has a single person as course responsible, 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, nor must it restrict the number of persons who can teach the course to one (see 2.7).

##### **Policy Concerning Diversity of Student Population on MSc Programmes**

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

- 1) The university must maintain a mapping of the curriculum to the qualification framework, to ensure that the level is MSc level (see 2.4);
- 2) Admission procedures must ensure that the admitted students we have the skills required to start the program (see 1.2);
- 3) The study structure on the program, the curriculum for the first semester and the required admission skills are sufficient to qualify all students to start at least two specializations (see 2.4);
- 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 key indicators of quality (grades, completion times, thesis grades, ...); see 2.3.
- 6) Each MSc head of programme keeps contact to the head of bachelor programs from which the program receive a large number of applicants (e.g. biennial meetings); see 2.3.

<sup>2</sup> Broadly, "VIP" ("videnskabeligt personale") stands for research faculty and DVIP ("deltids-VIP") stands for external lecturers (who do not have research obligations).

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<b>2.1 Quality Standard</b>	
Student Evaluation of Courses and Projects/Theses	
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.</p>
Predicate	<ol style="list-style-type: none"> <li>1. The average of the answers from the students to the quantitative questions in the course evaluation score should be greater than or equal to 4.75 (on a scale from 1 to 6) on all programmes.</li> <li>2. ... Predicate concerning student projects and entire programmes missing ....</li> </ol>
Responsible	Head of Study Programme
(Quality) Work Process	<ol style="list-style-type: none"> <li>1. CourseEvaluation</li> <li>2. Missing: process concerning evaluation of student projects</li> </ol>
Place of record	Study Programme Report
Alarm Handling Process	<ol style="list-style-type: none"> <li>1. Identify where the issues are located, e.g. single course, single teacher, single cohort, or prevalent across the programme.</li> <li>2. Identify if the issue lies in curriculum or in the teaching.</li> <li>3. Develop an action plan for how to handle issues. The Subject Area Team follows on issues concerning contents. The relevant Head of Section follows up on issues concerning personnel management.</li> </ol>

<b>2.2 Development Goal</b>	
Completion Times	
Predicate	<ol style="list-style-type: none"> <li>1. 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.</li> <li>2. Every programme meets its specific targets concerning reduction in study times.</li> </ol>
Responsible	<ol style="list-style-type: none"> <li>1. Head of Studies</li> <li>2. Head of Study Programme</li> </ol>
(Quality) Work Process	<ol style="list-style-type: none"> <li>1. PortfolioReport;</li> <li>2. StudyProgrammeReport</li> </ol>
Place of record	<ol style="list-style-type: none"> <li>1. Study Programme Report</li> <li>2. Education Portfolio Report</li> </ol>
Actions in case the goal is not met	<ol style="list-style-type: none"> <li>1. Follow up on the action plans of Heads of Study Programmes (see 2c) and document findings in the Education Portfolio Report.</li> <li>2. Individual programme: <ol style="list-style-type: none"> <li>a. Identify where the issues are located, e.g. single course, single cohort, or prevalent across the program.</li> <li>b. Identify if the issue lies in curriculum or in the teaching.</li> </ol> </li> </ol>

	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.
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<b>2.3 Quality Standard</b>	
Diversity of Students on MSc Programmes	
Terminology	To enable measurements and follow-up on the diversity issue, we define the following categories of students: Applicants from ITU; Applicants from Danish University (Not ITU); Applicants from Foreign University; and Applicants with a Danish Professional Bachelor degree.
Predicate 1	None of the admission categories systematically fall below the average of the other categories in some of the Primary Quality Data indicators.
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	1. StudyProgrammeReport 2. SemesterStart
Place of record	1. (ad Predicate 1) Study Programme Report 2. (ad Predicate 2) Minutes from Workshop
Alarm Handling Process	1. (ad Predicate 1) Problem must be analysed and a proposal must be developed to remedy either the curriculum or the admission procedure 2. (ad Predicate 2) The Education Group tasks the Head of Department with follow-up.

<b>2.4 Quality Standard</b>	
Qualification Framework and Progression	
Terminology	The framework is stated in programme-specific terms. The detailed curriculum is mapped against this program specific formulation. Finally, the learning outcomes of courses and thesis are mapped against their equivalent in the curriculum. Together, these mappings are referred to as a <i>Qualification Framework Mapping</i> .
Predicate	1) Each curriculum is maintained in such a manner that the combined learning outcomes of the program add up to the level required by the qualification framework. 2) For each MSc study programme p and admission track t for p, there must exist at least two specialisations on p intended for students on track t. Moreover, for each second-semester course which serves as the start of a specialisation for students and for all admission tracks t for whom the specialisation is intended, there must exist a written statement by the Head of Study Programme, approved by the Subject Area Team, containing an argument as to why all students admitted on track t who have achieved all the learning objectives of their first semester will have the qualifications to start the specialisation.
Responsible	Head of Study Programme

(Quality) Work Process	1) semesterworkshop 2) ?maybe have a semesterly programme curriculum review?
Place of record	1) Qualification Framework Mapping 2) In the archives of the Subject Area Team
Alarm Handling Process	The Subject Area Team must immediately change the curriculum to eliminate the shortcoming.

## 2.5 Quality Standard

### Balance between VIP and DVIP in teaching

Terminology	<p>Let <math>S</math> be a set of study activities on a programme for a given semester. For each study activity <math>s</math> in <math>S</math> we let <math>s_e</math> be the ECTS point size of the activity. We let <math>s_v</math> be the percentage of <math>s</math> taught by vip and similarly <math>s_d</math> is the percentage of the activity taught by dvip such that <math>s_v + s_d</math> is 100%. Finally, we let <math>s_n</math> be the number of student registered on the activity. We then define the vip/dvip ratio for the program on that semester relative to <math>S</math> as follows:</p> $\sum_{s \in S} (s_e \times s_v \times s_n) / \sum_{s \in S} (s_e \times s_d \times s_n)$
Predicate	For every study programme, the VIP/DVIP ratio is at least $x$ in 2015, at least $y$ in 2016 and at least $z$ in 2017. In 2014, the VIP/DVIP ratio was $v$ .
Responsible	Head of Department
(Quality) Work Process	CourseManning
Place of record	Study Programme Report
Alarm Handling Process	<p>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.</p> <p>In case of recurrence - that is, the same issue being logged two years in a row, the head of programme is asked propose a change to the curriculum in collaboration with the department to solve the issue.</p>

## 2.6 Quality Standard

### Research-based Course Design and Supervision

Predicate	<ol style="list-style-type: none"> <li>1. All course responsible are research faculty AND</li> <li>2. Syllabus, teaching methods, and exam form are always decided upon by research faculty, specifically the course responsible must ensure this; AND</li> <li>3. Only research faculty supervise final projects (MSc thesis, BSc final projects, and master final projects) (at least in part). In particular, research faculty supervise the student on issues related to the three bullet points from the educational strategy (that is, at least literature, methods, and problem statement and conclusion).</li> </ol>
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Responsible	<ol style="list-style-type: none"> <li>1. Research &amp; Learning Support</li> <li>2. Research &amp; Learning Support</li> <li>3. ?</li> </ol>
(Quality) Work Process	<ol style="list-style-type: none"> <li>1. CourseManning</li> <li>2. CourseManning</li> <li>3. ?</li> </ol>
Place of record	<p>Study Programme Report</p> <p><b>BUT: How do we ensure that only research faculty supervise final projects? What underlying data can one check to see whether it is the case?</b></p>
Alarm Handling Process	<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 Study Programme Reports. Each entry must contain who authorized the derivation (typically a head of program), which learning activity it was, which semester. If it related to the use of an external lecturer outside the scope of our policy (see Context section), it must further be logged why this external was deemed qualified, and in particular if the external lecturer is an active researcher at another research institution. Also, the entry should indicate which of the following three categories best fits the external lecturer:</p> <ul style="list-style-type: none"> <li>• Researcher from other institution (assistant professor or above)</li> <li>• Experienced practitioner</li> <li>• Experienced teacher</li> </ul> <p>After every semester, the Department Management discuss instances of study programmes that are in breach of the predicate and produce a plan for how to prevent the issues from arising again.</p> <p>In case of recurrence, ie., the same issue being logged two years in a row, the head of study programme is asked propose a change to the curriculum in collaboration with the department management to solve the issue.</p>

## 2.7 Quality Standard

Robustness (of manning and of realization of programme learning objectives under changes)

Terminology	The Department Management maintains a <i>Competence Map</i> , i.e, a map from courses to sets of faculty who can teach that entire course.
Predicate	No course or part of a course can only be taught by one faculty. 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.
Responsible	Department Management
(Quality) Work Process	<p>CourseManning.</p> <p>Notes: The Head of Study Programme assesses whether there are courses that can only be taught by one person 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 have any bearing on other courses or on compliance with the overall learning objectives</p>



	of the programme. <b>The Subject Area team</b> 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 (or else raise an alarm).
Place of record	Robustness of manning: Using the Competence Map, the Department Management checks whether every course can be taught by at least two members of faculty (see description of function <a href="#">updateCompetenceMap</a> 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	The course portfolio must immediately be changed or a co-teacher assigned to the course to eliminate the weakness.

## 2.8 Quality Standard

### Completion Rates

Terminology	Completion of bachelor and MSc studies within scheduled time plus one year is defined in the statistical framework ("statistisk beredskab") indicators G1.2 and G2.2, respectively.
Predicate	<ol style="list-style-type: none"> <li>1. Completion within scheduled time plus one year is at least <b>70 %</b> for students enrolled at full-time students at ITU.</li> <li>2. Every full-time programme satisfies that completion within scheduled time plus one year is at least <b>70 %</b>.</li> </ol>
Responsible	<ol style="list-style-type: none"> <li>1. Head of Studies</li> <li>2. Head of Study Programme</li> </ol>
(Quality) Work Process	<ol style="list-style-type: none"> <li>1. PortfolioReport;</li> <li>2. StudyProgrammeReport</li> </ol>
Place of record	<ol style="list-style-type: none"> <li>1. Study Programme Report</li> <li>2. Education Portfolio Report</li> </ol>
Alarm Handling Process	<ol style="list-style-type: none"> <li>1. Follow up on the action plans of Heads of Study Programmes (see 2c below) and document findings in the Education Portfolio Report.</li> <li>2. Individual programme: <ol style="list-style-type: none"> <li>a. Identify where the issues are located, e.g. single course, single cohort, or prevalent across the program.</li> <li>b. Identify if the issue lies in curriculum or in the teaching.</li> <li>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.</li> </ol> </li> </ol>

2.9 Quality Standard	
Contact and Feedback	
Terminology	One ECTS of study corresponds to 27 hours of work on behalf of the student, who earns the credit.
Predicate	For every course, some teacher on the course must spend at least 24 minutes weekly (on average) with students registered on the course (not including breaks) for each ECTS the course during the semester (xx weeks in autumn, yy weeks in spring). (This corresponds to 4 times 45 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	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.

## 2015 Quality Policy Area

### 3 Relevance and Employability

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

ITU wants its programs to give its students the competences needed for the future job market [ 2]<sup>1</sup>.

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 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).

#### ITU's Additional Policy Statements

For each MSc programme, the Head of Programme must at all times be able to answer (see 3.1):

- A) What segments of the labour market are addressed by each admission track of the programme;
- B) Which part of the programme specifically qualifies the student for the said segment;
- C) That all specializations are designed with an understanding the employment possibilities of said specialization

### 3.1 Quality Standard

#### Design for Employability (MSc)

Terminology	For every full-time study programme, the Subject Area Team formulates an <i>employment ticket</i> , i.e., something difficult and in demand in the labour market that all graduates of that study programme master.
Predicate	For every MSc programme, there exists a description, approved by the relevant programme-specific employers' panel no more than two years ago, of <ul style="list-style-type: none"> <li>a) (From Jan 1<sup>st</sup>, 2016) At least one "employment ticket" that all DDK graduates have.</li> <li>b) (From Jan 1<sup>st</sup>, 2017) What segment of the labour market are addressed by each admission track of the programme;</li> <li>c) (From Jan 1<sup>st</sup>, 2017) What part of the programme specifically qualifies the student for said segment; and</li> <li>d) (From Jan 1<sup>st</sup>, 2017) For each specialisation, how the design of the specialisation matches employment opportunities</li> </ul>
Responsible	Head of Study Programme

<sup>1</sup> References are listed in the Preamble of the Quality Policy.

(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	<ol style="list-style-type: none"> <li>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 developing one</li> <li>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.</li> </ol>
<b>3.2 Quality Standard</b> <b>Actual Employability (MSc)</b>	
Terminology	In 2015, the Minister for Higher Education and Science introduced a admission limits model ("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	No full-time program at ITU is affected by the national dimensioning model.
Responsible	Head of Study Programme
(Quality) Work Process	EmploymentTickets
Place of record	Study Programme Report
Alarm Handling Process	<p>The procedure is to examine whether the curriculum has become misaligned with the job-market.</p> <ol style="list-style-type: none"> <li>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.</li> </ol> <p>In addition, some of the following action can be taken:</p> <ol style="list-style-type: none"> <li>A. Conduct focus group interview with a handful of new alumnae;</li> <li>B. Draw a deeper statistic splitting the unemployment on the bachelor background of graduates;</li> <li>C. Study of the latest alumnae survey paying attention to issues that might be related to unemployment;</li> <li>D. Conduct focus group interview with relevant external lecturers within the programme;</li> <li>E. Raise the issue at a student meeting to get student input to the issue.</li> </ol> <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 curriculum 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"> <li>a) Perform a new alumnae survey to uncover details of the issue</li> </ol>

	<p>b) In collaboration with faculty, management, the programme-specific employers' panel and the executive-level employers' panel, to review whether the study programme needs to be changed to increase the segment of the labour market it addresses.</p> <p>c) Conduct a focus group interview the unions mostly representing the unemployed graduates.</p> <p>An analysis, the findings and a possible action plan are submitted to the Education Group in the next Study Programme Report. In particular, it must be address whether there is a need for downsizing the program, or for radical changes to the curriculum (radical in particular being the need for new research areas to cover new elements of the program).</p>
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3.3 Quality Standard	
Private Sector Employment (MSc and BSc)	
Predicate	<ol style="list-style-type: none"> <li>For ITU as a whole, the quota of IT University of Copenhagen 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.</li> <li>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.</li> </ol>
Responsible	<ol style="list-style-type: none"> <li>Head of Studies</li> <li>Head of Study Programme</li> </ol>
(Quality) Work Process	StudyProgrammeReport
Place of record	<ol style="list-style-type: none"> <li>Education Portfolio Report</li> <li>Study Programme Report</li> </ol>
Alarm Handling Process	<ol style="list-style-type: none"> <li>The Head of Studies develops an action plan for the approval of the chair of the executive-level employers' panel.</li> <li>The Head of Study Programme develops an action plan for the approval of the chair of the relevant programme-specific employers' panel.</li> </ol>

3.4 Quality Standard	
Interaction with Employers' Panels (MSc and BSc)	
Predicate	<ol style="list-style-type: none"> <li>ITU follows up on the recommendations of the employers' panels; AND</li> <li>The Employers' Panels find that ITU follows up on their recommendations</li> </ol>
Responsible	<ol style="list-style-type: none"> <li>Head of Study Programme (for programme-specific employers' panels) and Head of Studies (for executive-level employers' panel)</li> <li>Chairmen of the Employers' Panels</li> </ol>
(Quality) Work Process	<ol style="list-style-type: none"> <li>StudyProgrammeReport and PortfolioReport</li> <li>EmployersPanelMeeting and ExecLevelEmployersPanelMeeting</li> </ol>
Place of record	<ol style="list-style-type: none"> <li>Study Programme Report and Education Portfolio Report, respectively</li> </ol>

	2. Programme-specific Employers' Panel Reports from the Executive-Level Employers Panel Reports, respectively.
Alarm Handling Process	<p>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 chair of that employers' panel. If the chair cannot approve the action plan, the chair informs the Head of Studies.</p> <p>b) If the breach is in the executive-level employers' panel: The Head of Studies develops an action plan for the approval of the chair of the executive-level employers' panel. If the chair cannot approve the action plan, the chair informs the Vice Chancellor or the chair of the ITU Board of Directors.</p>
<b>3.5 Quality Standard</b> <b>Global Competence Profile (MSc and BSc)</b>	
Predicate	The profile of global competences and related activities of the Bachelor and MSc programmes are evaluated each year of the period of the 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	If the Head of Studies cannot approve the action plan or the follow-up on previous plans, the Head of Study Programme is scheduled for an appearance with the Education Group for the approval of a revised action plan.