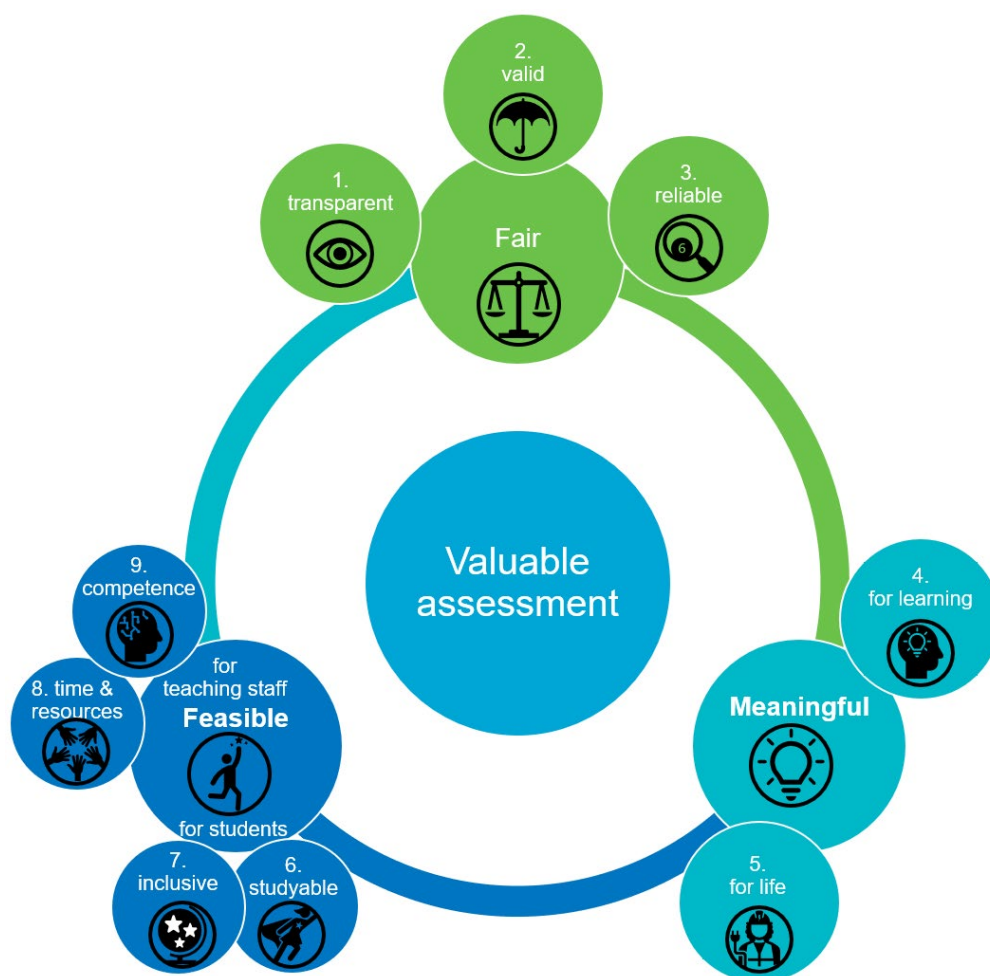# ASSESSMENT FRAMEWORK TU DELFT 2023-2028

VERSION 1.3, 1 SEPTEMBER 2023

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CONTENT

INTRODUCTION AND SUMMARY

It is important that graduates of the TU Delft sufficiently master the final attainments of their degree programme to be meaningful for their professional life (*civil effect*). The final attainment levels are measured by a set of assessments. Therefore, good quality of assessments is crucial.

Definition

An **assessment** is an educational activity during which individual students demonstrate how well they master the *learning objectives* of a course, and during which their performance is measured. This information is shared with students to steer and/or evaluate their learning. Disambiguation of assessment terms can be found in section **3.1** and in the glossary in **F.1**.

Context

In order to have good quality assessments, the Executive Board, together with different stakeholders, has defined this 'TU Delft Assessment Framework 2023-2028'. In defining this framework we have taken both external requirements (e.g. from the Higher Education and Research Act[1]) as well as TU Delft agreements (e.g. Model Teaching and Examination Regulations[2], TU Delft Vision on Education[3]) into account.

Assessment building blocks that determine assessment quality

The TU Delft assessment is of good quality if all assessment aspects (*assessment building blocks*, see **Figure 1**) are of good quality and consistent with each other.
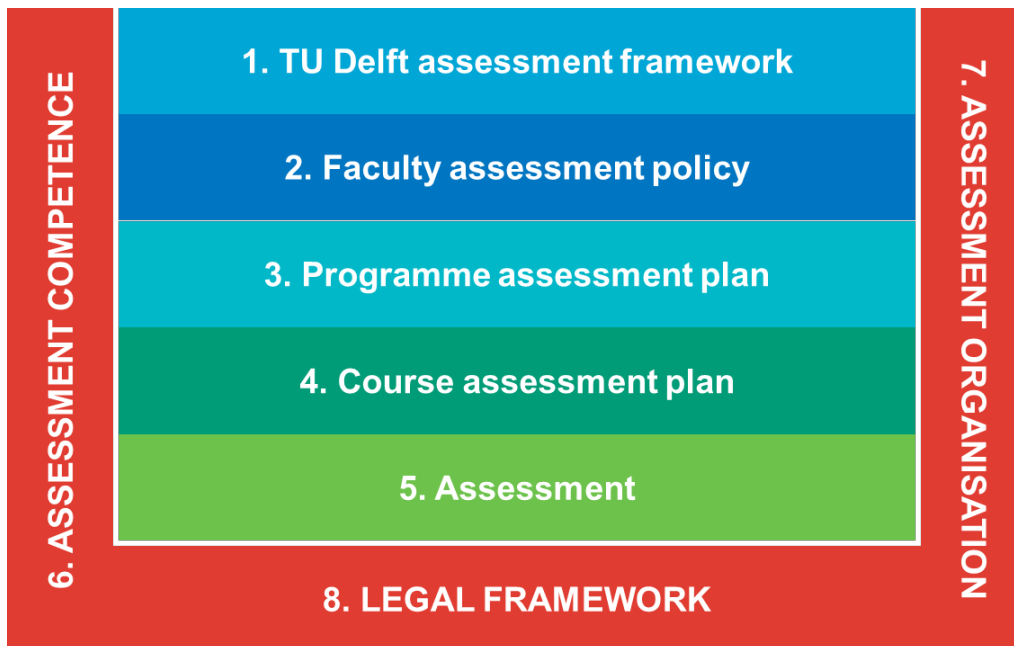
Figure 1. Assessment building blocks at the TU Delft that determine the assessment quality.
Assessment quality entails the quality and consistency of the following building blocks: 1) TU Delft assessment framework, 2) the faculties' assessment policies, 3) the BSc's and MSc's programmes' assessment plan, 4) the courses' assessment plans, 5) the assessments itself, supported by 6) assessment competence, 7) the assessment organisation, and 8) the compliance with the legal framework. Adapted from the assessment web[4].

The first five *building blocks of assessment*[a] (see **Figure 1**) form a logical order from central to assessment level:

1. TU Delft assessment framework
2. Faculty assessment policy
3. Programme assessment plan
4. Course assessment plan
5. Assessment

The final three *building blocks* are important at all levels, which they support.

6. Assessment competence (of everybody with an assessment task)
7. Assessment organisation (on all levels)
8. Legal framework (on all levels)

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[a] 'Assessment building blocks' are also called 'entities'[4], 'pyramid layers'[5], 'building blocks'[6] in different sources. Since we are a technical university, 'building blocks' seems fitting. The building blocks are adapted from the assessment web[4].

Chapter **6** and Appendix **D.1** indicate on a general level who is accountable, responsible, consulted and informed on what building block.

Topics

The TU Delft Assessment Framework 2023-2028 contains the following topics:

1. Vision on assessment (chapter **2**, building block 1): an overview of the assessment values and guidelines that form the backbone for the decisions that the TU Delft makes on assessment.
2. Legal framework (chapter **2**, building block 8): an overview of documents that have led to and follow from this assessment framework.
3. TU Delft assessment agreements (chapter **3**, building block 1 and 8): an overview of TU Delft wide agreements on assessment and their sources, which is or will be operationalised in the faculties' assessment policies and/or other documents.

Next to these three chapters that describe TU Delft agreements, the following three chapters indicate how the TU Delft facilitates assessment quality:

4. Assessment policies in the faculty (chapter **4**, building block 2, 3, 4 and 6): an overview of how faculties ensure assessment quality through the faculty's assessment policy, the programme's assessment plan, and the course's assessment plan.
5. Assessment organisation (chapter **5**, building block 7): an overview of who is responsible for relevant assessment tasks.
6. Assessment competence (chapter **6**, building block 6): an overview of how the TU Delft ensures that assessment stakeholders have sufficient assessment competence. This includes an overview on how the agreements in the first two chapters are operationalised.

In addition:

7. **Appendix F** gives an overview of the assessment-related terminology and abbreviations.

Reading guide

Table 1 suggests per function type what the most relevant parts of the assessment framework are.

Table 1. Reading guide

Who	sum-mary	1	2	3	4	5	6	A	B	C	D	E	F
							Chapter						
dean	S					5	6.5				D.1-D.3	E	F
director of education	S	1	2	3.1, 3.2, 3.4, 3.6, 3.9	4	5	6		B	C.1	D.1-D.3, D.5	E	F
programme director	S	1	2	3	4	5.1, 5.4-5.16-5.17	6.3, 6.5-6.6		B	C.1	D.1-D.3, D.5	E	F
head of ESA	S			3.1-3.3, 3.7-3.8, 3.11-3.12	4	5	6		B	C.1	D.1-D.5	E	F
examiner	S	1	2	3.1-3.12	4.3-4.4	5.1, 5.7-5.9, 5.13-5.17	6.2-6.3, 6.5-6.6		B	C.1	D.3-D.5		F
board of examiners	S	1	2	3	4	5.1, 5.4-5.17	6.3-6.5		B	C	D	E	F
board of studies	S	1		3	4	5.1, 5.4-5.16				C.1	D.1-D.3		F
educational advisor, assessment advisor, educational policy advisor	S	1		3	4	5	6		B	C.1	D		F
quality assurance officer	S	1.3	2	3.1, 3.7		(5)				C.1	D.1, D.3		F
secretary to the BoEx	S		2	3	4	5.1, 5.4-5.17	6.3-6.5		B	C	D	E	F
faculty student council	S	1		3	4	5.1-5.12					D.1-D.3		F
central student council	S	1		3.1-3.7, 3.11		5.1-5.12					D.1-D.4	E	F
Exam logistics	S	1		3.1-3.4, 3.7, 3.11	4.3	5.1-5.5-5.9, 5.13-5.17	6.2, 6.5				D.3-D.4	E	F
Study Programme Administration	S	1		3.1-3.3, 3.5, 3.7, 3.12-3.13	4.3	5.1, 5.5-5.9, 5.13, 5.17	6.3-6.5					E	F
Functional application administrators	S	1		3.1, 3.3-3.9, 3.11		5.1, 5.5, 5.17					D.3-D.4		F
Legal services	S	1	2	3		5			B		D.1-D.2, D.5	E	F
Trainers (educational)	S	1	2	3	4	5	6		B	C.1	(D)	E	F
Human Resources	S	1				5	6						F
ESA policy officers	S	1	2	3	4	5	6		B	C	(D)	E	F
Digital Excellence for Education	S	1				5.17							F

Scope

This TU Delft framework provides all people involved with assessments in TU Delft BSc and MSc courses with a vision on assessment, and it defines the TU Delft agreements and conditions concerning these assessments. Faculties will make sure their assessment policy and programme assessment plans will be aligned with this 'TU Delft Assessment Framework' and the resulting conditions that are summarized below per assessment building block (and chronologically in A.1). Interfaculty programmes, programmes that are joint degrees with other universities, and programmes that face specific national requirements can encounter conflicting policies. The same holds for service courses and free electives. In these cases, programmes (and courses) make an informed decision on what policy to follow.

Conditions for good quality assessment per building block

Below, the conditions that are necessary to ensure good quality assessment are listed per building block. The conditions are numbered in the order in which they appear in chapter 1-6. Symbols below the condition number indicate whether the responsibility is central (▲), at faculty level (IIIII), or both (IIIII). Click on a condition to go to the part of the framework that discusses this condition.

1. Assessment framework (TU Delft)

condition 1: TU Delft, the faculties, the programme directors, and the examiners consciously consider the assessment values and quality requirements for assessments in their decisions about assessment.

condition 2: TU Delft, the faculties and the programme directors ensure that all assessment building blocks are of good quality and consistent with each other. The quality of these building blocks is systematically assessed and improved at least once every six years (see quality assurance plan).

condition 3: TU Delft ensures that the central quality assurance plan and the TU Delft assessment framework are aligned.

condition 9: The TU Delft ensures that the assessment framework meets and operationalises the requirements of the institutional audit.

condition 11:

TU Delft and the faculties ensure that the assessments follow the TU Delft assessment agreements, listed in chapter 3.

2. Assessment policy (faculty)

condition 4:

The faculties ensure that their quality assurance handbook and their assessment policy comply with each other (including the evaluation frequency), and that both documents comply with the TU Delft framework.

condition 10:

The faculties ensure in the faculty's assessment policy that their programmes live up to standard 3 (assessment) and 4 (achievement of the programme's final attainment levels) of the assessment framework of the NVAO.

condition 12:

The directors of education ensure that their faculty has an up-to-date assessment policy which is in line with the TU Delft assessment framework and that operationalises the topics listed in 4.1.

3. Assessment programme (programme)

condition 13:

The programme directors ensure that their programme has an up-to-date programme assessment plan that is in line with their faculties' assessment policy, and that operationalises the topics listed in 4.2.

condition 15:

The programme directors ensure that their graduation projects have an up-to-date graduation manual that is in line with the programme assessment plan and with regulations. The manual contains the topics listed in 4.4.

condition 17:

The boards of examiners secure that graduates meet the final attainment levels of the programme by executing their legal tasks, listed in 5.9.

4. Assessment plan (course)	5. Assessment

condition 14: The course examiners ensure that their course has an up-to-date course assessment plan that shows how the learning objectives are assessed formatively and summatively. The course assessment plans are in line with the applicable programme assessment plan and faculty assessment policy, and operationalise at least the topics listed in 4.3.

6. Assessment competence

condition 19: TU Delft ensures that educational and assessment quality are explicitly mentioned in both the HR recruitment and professional development policy.

condition 20: TU Delft ensures that the assessment training offer of Teaching and Learning Services (LS) is integrated in the HR training offer.

condition 21: TU Delft offers training opportunities on assessment to staff.

condition 22: The boards of examiners ensure that all appointed examiners have a UTQ qualification and that other assessors work under the responsibility of an examiner.

condition 23: The boards of examiners determine prerequisites on who may carry out key assessment tasks.

condition 24: The boards of examiners have regulations on the composition of the graduation committee to ensure assessment quality of graduation projects.

condition 25: TU Delft ensures that the HR system keeps track of at least the relevant assessment qualification of staff, listed in 6.5.

condition 26: TU Delft and the faculties ensure that new employees receive the required information and training in order to carry out their assessment tasks.

condition 27: TU Delft and the faculties make relevant assessment information available for stakeholders.

condition 28: Assessment experts within TLS and the faculties offer support and advice on assessment.

7. Assessment organisation

condition 16: TU Delft, the faculties and the boards of examiners ensure that the tasks and responsibilities of the different stakeholders with respect to assessment are clear.

condition 18: TU Delft and the faculties support the programmes, and the courses in the process and execution of assessments.

condition 5: The TU Delft ensures that the available assessment tools support the goals of digital assessment tools (see 'Goal of digital assessment tools' in 1.4).

8. Legal framework

condition 6: The TU Delft and the faculties ensure that the owners of the assessment documents mentioned in Appendix B keep these up-to-date and congruent (consistent with each other).

condition 7: The TU Delft and the faculties ensure that students, teaching staff and other stakeholders are informed on their rights and obligations and in changes thereof (see Table 5).

condition 8: The TU Delft and the faculties ensure that the assessments comply with the legal framework as described in Appendix B of this framework.

Revisions of the assessment framework

Finally, since this is the first time the assessment framework has been published in this form, the Assessment Framework 2023-2028 will be revised a year after its publication based on feedback from stakeholders and changes in underlying documents. Therefore, feedback is more than welcome and can be sent to assessment-taskforce-esa@tudelft.nl.

Apart from yearly corrections and minor updates based on changes in the legal framework and newly developed or adapted TU Delft policies, a more thorough revision of the assessment framework will take place at least every six years.

1. ASSESSMENT VALUES AND GUIDELINES

Assessment values help to make consistent decisions on assessment. This chapter explains what the current TU Delft vision on assessment is, for each of the following four aspects:

1. What the value of assessment is at the TU Delft?
2. What the TU Delft assessment values and resulting quality requirements for assessment are?
3. How the TU Delft defines and maintains assessment quality?
4. How the combination of all TU Delft assessment tools support this?

The scope of the TU Delft vision on assessment is good quality assessment. The vision on assessment follows the vision on education[3]. Since the vision on education differs per faculty or even per programme, a directive central vision on assessment would diminish the freedom for the faculties' (and programmes') visions on education and assessment. That is why the TU Delft vision on assessment focusses on good quality assessment, and that faculties and programmes will have different visions on education and as a result, different visions on assessment.

1.1 The value of assessment

Value of assessment in education: constructive alignment
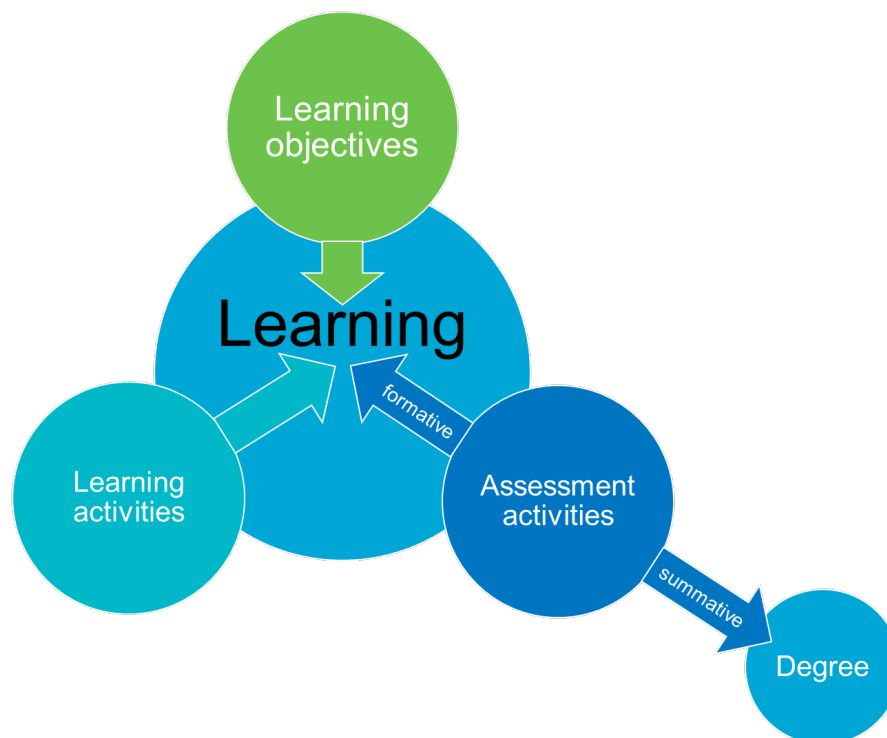
Figure 2. Role of assessment in constructive alignment

The TU Delft uses **constructive alignment as a design principle** for courses and programmes in order to support student learning.[3] In constructively aligned courses, learning objectives, **learning activities** and **assessment activities** are aligned (see **Figure 2**). **Learning objectives** describe the ultimate but feasible level students are expected to achieve during a course. **Assessments** are educational activities (individual or in a group) during which individual students show how well they master the learning objectives (LOs) of a course. The TU Delft distinguishes between **formative assessment** and **summative assessment**(s). Formative assessments do not influence the course grade but give feedback on student learning (progress - and/or content related) to students during the course, while summative assessments determine the course result (grade or pass/fail). Courses consist of a combination of formative and summative assessment[7], which supports the learning process of students. For lecturers, formative assessments help to adapt their teaching to the students' needs **during** the course, while summative assessments provide information for course evaluation and improvements for the next course run.

Value of formative assessment & feedback

The goal of **formative assessments** and the resulting feedback is to support learning by giving students information on their learning that enables them to take ownership of their learning process (*assessment* **for** *learning*)[3]. Formative assessments result in **feedback** that is focussed on and structured per learning objective or assessment criterion. It holds valuable information on how well students do, and how they can improve. This enables students to steer their learning activities towards mastering these at the end of the course. In addition, lecturers use the information from the formative assessment to adapt the course to the needs of the students during the course run.

An activity counts as a formative assessment, if the following requirements are met:

1) if the assessment is either **at the level** of the learning objectives, or (in case of e.g. assessment of draft products) or it if students can **extrapolate the level of the assessment to the level of the learning objectives** (otherwise it is a learning activity)

2) if the performance of students during the activity does not count for the course grade[b] or passing the course, and if the activity is **voluntary** (otherwise the assessment is summative)

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[b] Students will of course learn from formative assessment. Learning will positively influence their course result (grade or pass/fail).

3) if students **receive structured feedback**[c] on the applicable assessment criteria or learning objectives. The feedback gives useful information on whether they are on track to reach the learning objectives by the end of the course. Example: feedback via a rubric.

4) if students are able and stimulated to **use the feedback** in consecutive learning activities and summative assessment (alignment with summative assessment)

Feedback can be provided by teaching staff, by peers, or by self-evaluation. The most important success factor for participation in formative assessment is timely and good quality feedback on these formative assessments[8]. This implies that training, tools, and time empower feedback providers. In addition, programmes have a policy on formative assessment (see **4.2**) which ensures alignment between courses within an educational period[d].

Value of summative assessment

Summative assessments determine the result of a course. **The goal of summative assessment** is to evaluate how well individual students master the learning objectives (*assessment of learning*), and whether this is sufficient to pass the course. Summative assessment(s) lead to a course grade, which reflects to what extent an individual student masters the learning objectives at the end of this course. Depending on whether the grade is sufficient, this will lead to a pass-fail decision for that course.

Role of grades

Course grades represent how well individual students master the learning objectives at the end of the course. Grade 10 indicates that the student masters the learning objectives fully. Grade 6 indicates that the student masters the learning objectives on average just sufficiently to pass the course and start the consecutive course, start a consecutive degree programme, or start a professional career. This depends on the place of the course in the programme (more information on '**Scoring and grading**' in **3.5**).

Value of assessment in programmes and courses

An **programme assessment plan** is the overview of all (summative) assessments of all courses in a BSc or MSc programme. Its goal is to demonstrate that the programme's various

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[c] Feedback that is structured per applicable LO or assessment criterion. The term is used as the opposite of 'unstructured feedback', in which not all LOs or criteria are systematically assessed.
[d] This is important if there are two parallel courses. If one of them has fully voluntary formative assessments while the other course has small assessments that counts for the course grade, students tend to focus on the second course.

assessments secure qualified graduates. Therefore, the programme's assessment plan shows how the learning objectives of the courses cover the **final attainment levels (FALs)** of the degree programme. FALs describe clearly what graduates of the specific programme should be able to do. **FALs are** also called **intended learning outcomes** (**ILO**s) during accreditations[e].

Subsequently, the **assessment plans** of individual courses show how their learning objectives are covered by the assessment(s) and their appropriate method(s), ideally including formative assessment. This combination of programme assessment plan and course assessment plans ensures that graduates master the FALs, which secures that they are justifiably awarded with the bachelor's or master's degree of the TU Delft.

1.2 Assessment values and quality requirements

The assessments at TU Delft should be **fair**, **meaningful,** and **feasible**. The TU Delft strives towards these three **assessment values** and they form the basis of decisions on assessments. They are the basis for the following **9 quality requirements** for assessment (see **Figure 3**) that match the TU Delft vision on education[3], the TU Delft vision on teaching and learning[9], and the assessment framework for the higher education accreditation system of the Netherlands[10]. Since it is impossible to obtain all requirements simultaneously, the TU Delft strives for a **balance** between the nine **assessment requirements**.

> **condition 1:** **TU Delft, the faculties, the programme directors, and the examiners consciously consider the assessment values and quality requirements for assessments in their decisions about assessment.**

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[e] or exit qualifications
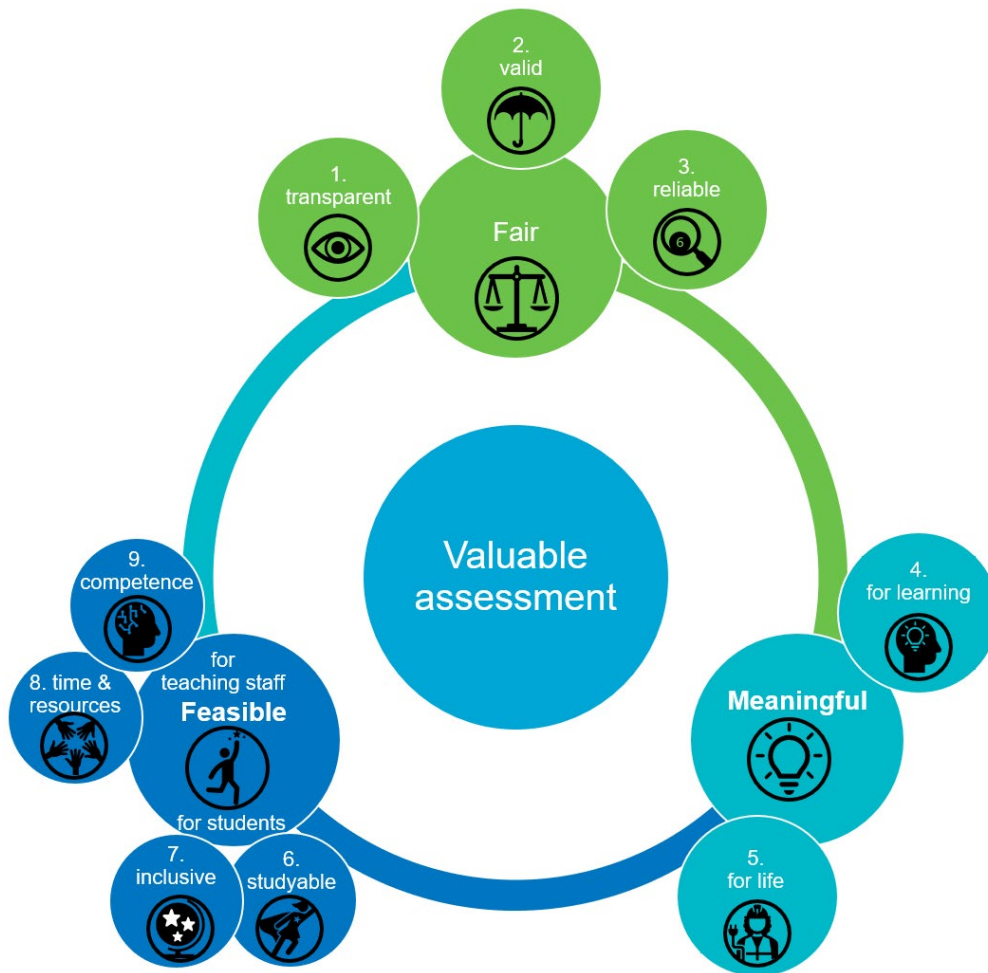
Figure 3. The three TU Delft assessment values and nine quality requirements for assessment.

The value 'fair' consists of 1) transparency, 2) validity, and 3) reliability. The value 'meaningful' consists of meaningfulness 4) for learning and 5) for life. The value 'feasible' consists for students of 6) studyability and 7) inclusivity, and for teaching staff of 8) time and resources and 9) competence.

Fair

> **Assessment is fair if the feedback and/or results correctly represent the extent to which students master the learning objectives of the course and if this is in line with student expectations.**

Quality requirement 1:   **transparent**

The course examiner is **transparent** about the assessment and grading before, during and after the assessment, because this is essential information that empowers students to achieve optimal learning. In addition, course examiners are transparent about feedback and complaint procedures.

Quality requirement 2:   **valid**

The **assessment method,** and the **aspects** and levels on which the students are evaluated (assessment criteria) are **constructively aligned** with the learning objectives, i.e. assess to what extent students master the learning objectives. Students are trained on these learning objectives during the course in **learning activities**.

Quality requirement 3:   **reliable**

The assessment is reliable if the grades and/or feedback are **precise** and **consistent** (discriminates correctly between good performing and worse performing students, and has sufficient precision), **reproducible**, and **objective** (e.g. **unbiased**[f]), and represents the ability of **individual** students. This implies the assessment of (the contribution of) individual students in group work, partial grading, as well as fraud prevention[g] and fraud detection. See also '**Meaning of grades (model R&G art. 14.4)** in **3.5** on page **40**.

Meaningful

> **Assessment is meaningful if it supports learning during the course and if the assessment method and content is relevant for and a reflection of their future professional or study situations.**

Quality requirement 4:   **meaningful for learning**

Meaningful in the sense that individual assessments and course assessment plans **supports learning and steer the learning process**. This requires constructive alignment, timely **feedback on the learning outcomes** that students can apply in summative assessments, and a **safe**

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[f] In assessment literature, assessor bias is considered to mainly influence reliability (instead of validity), probably because most assessment effects are caused by the order in which the student work is assessed (sequence effect, norm shift, contamination effect, etc.[11]) and are therefore in general randomly distributed over the students.

[g] In exam settings, fraud is related to the conditions in which the exam was administered, and not related to the validity of the assessment itself. Therefore, it is listed under **reliability**. In assessments without invigilation (e.g. take-home assignments and projects), fraud like plagiarism and free-riding are explicitly forbidden, like it is in professional situations. Therefore, fraud is not assumed to influence the **validity** of the assessment, but the **reliability**. I.e., we assume that the **reproducibility** of the assessment is jeopardized.

However, in case of widely available tools (like **AI tools**) that graduates will use in their professional life, lecturers must assume that students will use this tool during non-invigilated assessments and adjust the learning objectives and assessment criteria accordingly. If the AI tool is not taken into account, the **validity** of the assessment is jeopardized.

learning environment. This enables students to take ownership of their learning[3].

Quality requirement 5:   **meaningful for life**

Meaningful in the sense that assessment methods, and/or cases/topics are **relevant and authentic**, i.e. represent real or realistic cases from the graduates' professional careers[h], have explicit relevance for future courses, and reflect the diversity of the (global) work field, its employees and society at large.

Feasible

Assessment is feasible if students and teaching team can complete inclusive assessments with the time, means and competence available.

Feasibility for students implies

Quality requirement 6:   **studyable**
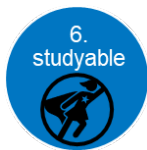
Qualified students are able to **pass courses** if they effectively invest 28 hours per EC[12], and qualified students are able to **finish assessments** within the allotted time.

Quality requirement 7:   **inclusive**

Assessments are accessible for students with **the most common support needs**[i] and take into consideration the **diversity of the student population** in terms of educational background, economic situation, as well as visible and non-visible differences.

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[h] If this is appropriate and feasible for the course.

[i] See model TER[2 art. 25.1]: "Students with the [sic] support need means students who are held back due to a functional limitation, disability, chronic illness, psychological problems, pregnancy, young parenthood, gender transition, or special family circumstances, for example in relation to informal care". Accessibility can be increased by for example using dyslexia-friendly fonts, colourblind-friendly colours, and clear instructions, and by offering TU wide facilities like the extension of exam time.

Feasibility for staff implies

Quality requirement 8: **time and resources**

Course examiners, together with the teaching staff, can carry out the course assessment plan within the available **time, and resources** like tooling, support, money and efficient assessment processes.

Quality requirement 9: **competence**

Employees with a role in the assessment process are **competent** for their tasks. Information, advice, and training support their competence.

How these values and their corresponding quality requirements are implemented, will be identified and noted throughout this document.

1.3 Assessment quality

The TU Delft achieves good quality assessment because all aspects of assessments (*building blocks*) are consistent with each other and because both their consistency as well as their individual quality is monitored and improved in the Plan Do Check Act (PDCA) cycle[13] of the Quality Assurance System of the TU Delft. This section discusses what these building blocks are and how this improvement takes place.
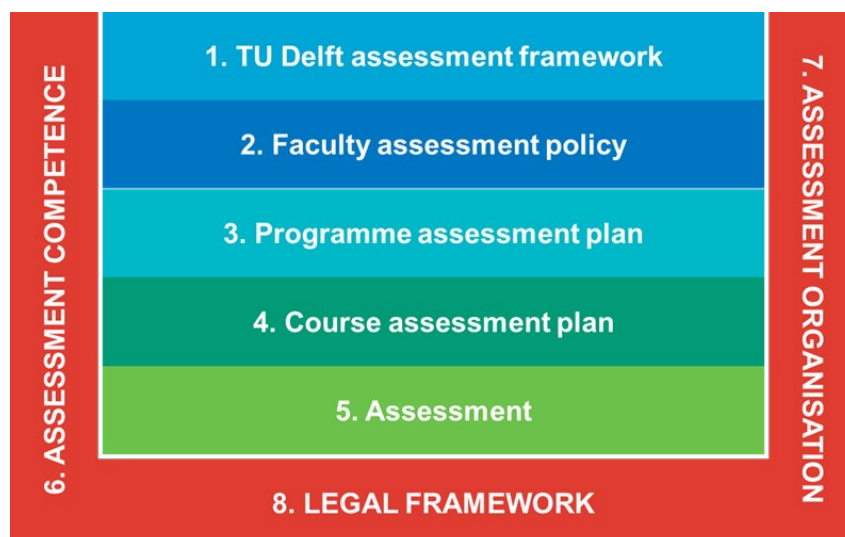
Figure 4. Assessment building blocks at the TU Delft that determine the assessment quality.
See running text. The red, surrounding blocks (6, 7, and 8) *support* and are the fundament of the central blocks (1-5).

Assessment at the TU Delft can be divided into eight aspects that we will call *building blocks of assessment*[i] (adapted from the assessment web[4], see **Figure 4**):

1. TU Delft Assessment framework
2. Faculty assessment policy
3. Programme assessment plan
4. Course assessment plan
5. Assessment
6. Assessment competence (of everybody with an assessment task)
7. Assessment organisation (all levels)
8. Legal framework (all levels)

These building blocks range from national level to assessment level. The TU Delft vision on education and the national legal framework are the basis for the TU Delft assessment framework, which includes the assessment vision. This framework, and the faculties' educational vision and policy form the basis of the faculties' assessment policies. The latter forms the basis for the assessment programs of BSc and MSc programmes, which are influenced by the programmes' intended learning outcomes. From the programme assessment plans, the course assessment plans sprout, based on their learning objectives, with the actual tests at the bottom of this chain. The assessment organisation and assessment competence support all previously mentioned building blocks.

A faculty's assessment policy can deviate from the assessment framework, if this is motivated by the faculty's vision on education and if this does not negatively influence assessment quality.

At least every six years, the assessment quality of each of these building blocks is systematically assessed and improved by checking its requirements. Assessment is of good quality if each building block supports the assessment values (fair, meaningful and feasible), adheres to the previously described nine quality requirements for assessment, and meets the block's conditions as described in the following chapters. The conditions are summarized per building block in the '**Introduction and summary**' and summarised chronologically in Appendix **A.1**.

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[i] 'Building blocks of assessment' are called 'entities'[4], 'pyramid layers'[5], and 'building blocks'[6] in literature. Since we are a technical university, 'building blocks' seems fitting.

> **condition 2:** TU Delft, the faculties and the programme directors ensure that all assessment building blocks are of good quality and consistent with each other. The quality of these building blocks is systematically assessed and improved at least once every six years (see quality assurance plan).

Relation between quality assurance at central and faculty level
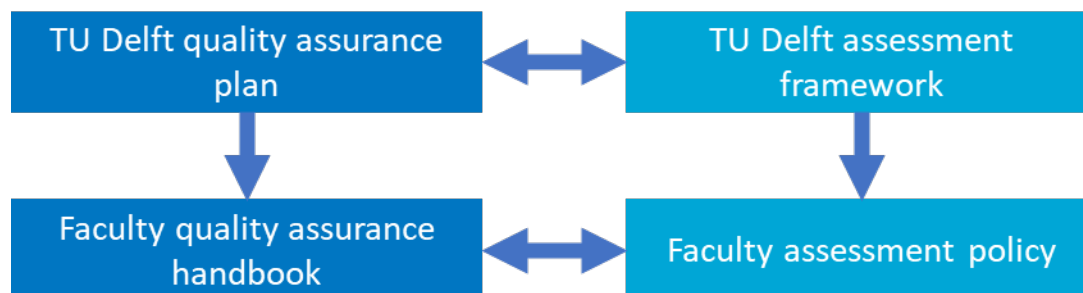
Figure 5. Relation between the TU Delft assessment and quality assurance documents at central and faculty level.

The TU Delft has a central quality assurance plan[14] in place that describes a framework for how the quality of education (including assessments) has to be monitored and improved. Both in the faculty's **quality assurance handbook** and in the **faculty's assessment policy** it is made clear *how* the quality of the building blocks 'programme assessment plan', and 'course assessment plan' & 'assessments' is provided and monitored within the faculty's organisation. So, the central quality assurance plan, the assessment framework of the TU Delft, the faculty's quality assurance handbook, and the assessment policy of the faculty are aligned with each other (see **Figure 5**).

> **condition 3:** TU Delft ensures that the central quality assurance plan and the TU Delft assessment framework are aligned.
>
> **condition 4:** The faculties ensure that their quality assurance handbook and their assessment policy comply with each other (including the evaluation frequency), and that both documents comply with the TU Delft framework.

Course assessment cycle

To continuously improve the quality of course assessment, examiners follow an assessment cycle. Most faculties will have assessment cycles that look like the following (see **Figure 6**):
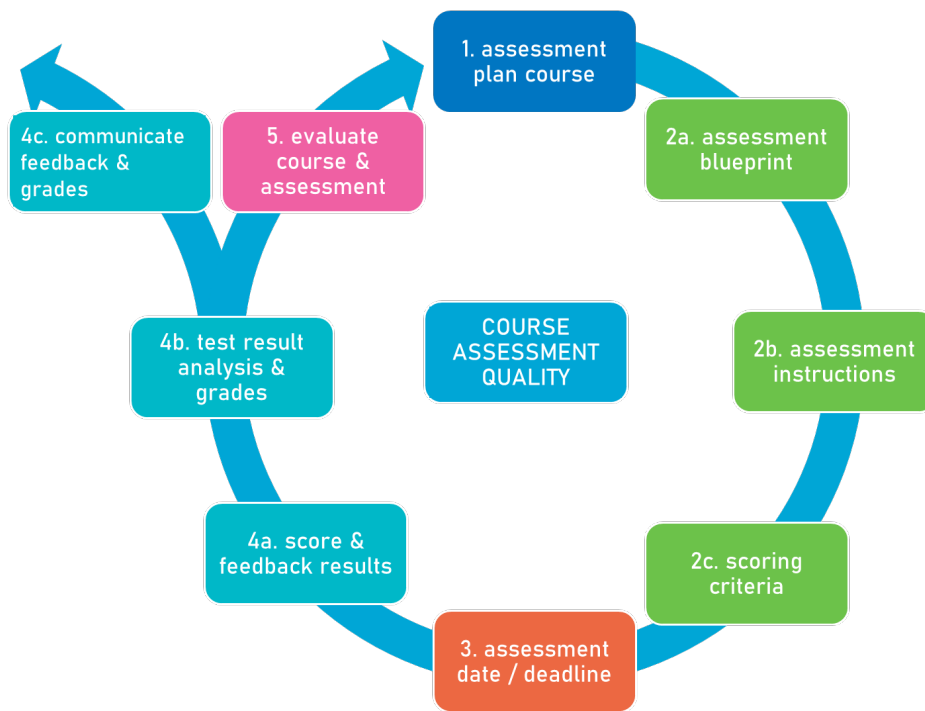
Figure 6. General (summative) assessment cycle TU Delft.
1) develop/redevelop the assessment plan of the course; 2) develop the formative and summative assessment(s) (exam, project, assignment, etc.) of the course; 3) administer the assessments to the students; 4) feedback, score, analyse, grade, and communicate feedback and grades to the students; 5) evaluate the course and its assessment. See running text. Based on Expert group BKE/SKE (2013)[15].

The steps comprise the following (for more details, see the [TU Delft assessment manual](#)[16])

1. **Assessment plan course**: develop or improve an assessment plan for the course, which includes the learning objectives, how formative and summative assessments will be combined, and how the final grade will be calculated.

2. **Develop the formative and summative assessment(s):**

    a. **Assessment blueprint:**

        i. **Exams:** develop an assessment matrix [k],

        ii. **Other assessment methods:** develop the assessment using a consistency check table [l].

    b. **Assessment and assessment instructions (formative and summative):**

---

[k] In an assessment matrix on exam level, learning objectives (LOs) are rows, and levels of the taxonomy (e.g. Bloom's) are columns. Cells contain subquestion numbers and corresponding numbers of points/weights. Per learning objective (row), the cell(s) that correspond to its level of the taxonomy is/are highlighted.
[l] In a consistency check table, learning objectives (LOs) are rows, and deliverables/processes are columns. Cells contain the applicable assessment criteria and their weight (or points). Columns with formative assessments contain criteria with 0% weight.

   i. **Exams/exam-like tests**: develop questions and subquestions, and provide students with general instructions on answering questions and the available resources & tools during the exam beforehand, and on the exam cover page.

   ii. **Other assessment methods**: formulate the assignment and include the assignment's relevance (related to **Quality requirement 5**), learning outcomes, instructions, available resources, deliverables & due dates, assessment criteria, grade calculation and feedback possibilities[17].

  c. **Scoring criteria:**

   i. **Exam:** develop an answer model. An answer model consists of at least the model answer and a scoring guide[m].

   ii. **Other assessment methods:** develop assessment criteria to assess the students' work (rubric and/or assessment form), aligned with the LOs of the course.

3. **Assessment date/deadline**: administer the assessment to the students. For exams, this happens during the designated time slot (called 'exam time slot') according to the procedures outlined in the TU Delft Rules of Procedures for Examinations (RPE)[18], and in the applicable Teaching and Examination Regulations (TER) and Rules and Guidelines of the Board of Examiners (R&G)[n]. For other assessment forms, students can work on their assessment until the deadline.

4. **Grading process:**

  a. **Score and feedback**: assessors (people who assess) score the students' work and (if applicable) create structured feedback[o] to the students.

  b. **Test result analysis and grades**: examiners use test result analysis as input for adaptation of the answer model/rubric and of the initial score-grade transformation, if necessary. Examiners calculate the grades using the score-grade transformation.

  c. **Communicate grades and feedback**: examiners communicate the feedback and grades to the students in time and according to regulations, and give students the opportunity to review their assessed work.

---

[m] A scoring guide contains the number of (+) points per correct step, and (if applicable) a list of mistake/omission and corresponding subtraction points (-). For essay questions, a rubric can be used.
[n] R&G: Every faculty has their own abbreviation. See **E.5**
[o] 'Structured feedback' is feedback that is structured along the learning objectives or assessment criteria.

5. **Evaluate course & assessment:** the test result analysis is used to analyse the **learning objective achievement** and is used together with the teaching staff's and students' experience, and the course evaluation (EvaSys) to improve next year's course.

1.4 Digital assessment tools: goal and landscape

Goal of digital assessment tools

To reduce the assessment workload for teaching staff and to increase the assessment quality, the TU Delft has created a digital assessment tooling 'landscape' (see **Figure 7**) with a range of assessment related tools. The tools support the execution of the TU Delft assessment framework. Therefore, the goals of these tools are:

1. Supporting and monitoring assessment quality[p].
2. Supporting teaching staff in executing the assessment cycle (see **Figure 6**).
3. Reducing the workload of teaching staff.
4. Supporting both formative and summative assessment, as well as learning activities.
5. Supporting the large variety in programmes and assessments (resulting in a landscape that consists of more than one tool).
6. Supporting students in taking their exam (including accessibility for students with a support need)

> **condition 5:   The TU Delft ensures that the available assessment tools support the goals of digital assessment tools (see** 'Goal of digital assessment tools' **in** 1.4**).**

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[p] Examples: the availability of user-friendly test result analysis will facilitate and stimulate lecturers to use them to adjust the answer model and increase the reliability of the grade; increasing the ease of giving feedback will stimulate lecturers to give good quality feedback; facilitating partial grading of open-ended questions will increase grade reliability compared to single answer numerical questions.

Assessment tools landscape
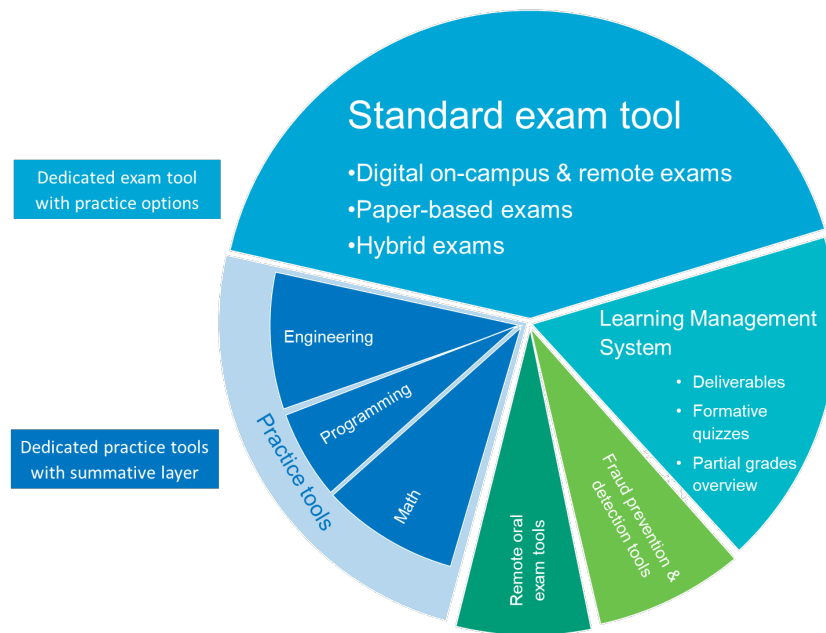
Figure 7. Digital assessment tool landscape TU Delft (2023)

The assessment landscape (**Figure 7**) of the TU Delft consists of the following elements in 2023:

- **A standard digital exam tool** (currently Ans) facilitates automatic and manual online scoring of paper-based, digital or hybrid exams (upper part **Figure 7**). It can also be used for formative assessment.

- **Dedicated practice tools** focus on learning a specific discipline and have a summative layer. There are tools for math (currently Grasple), engineering (currently Ans and Möbius[q]), and programming (currently Jupiler Notebook, lower left part of **Figure 7**).

- **Learning Management System (LMS)** where students deliver reports, presentations, etc. and where teaching staff provides these with grades and feedback, checks for plagiarism, and keeps track of partial grades. The formative quiz-tool automatically provides feedback to multiple choice, numerical and brief textual answers. Current LMS: Brightspace.

- **Fraud prevention & detection tools** for on-campus exams[r] (lower right part of **Figure 7**), and online proctoring software (currently RPNow) to facilitate certain remote exams[s], and plagiarism software (currently Ouriginal).

- **Oral exam tools**: currently generic conferencing tools (dark green part in **Figure 7**)

---

[q] Möbius is replaced by Ans as standard exam tool as of 2023.

[r] Currently, on-campus exams use a TU Delft based safe exam environment.

[s] Online proctoring exams can only be administered as a last resort, and after approval of the Board of Examiners[19].

2. LEGAL FRAMEWORK: DOCUMENTS AND ACCREDITATION

The goal of this chapter is to show *how* the TU Delft operates by describing the legal framework within which assessments take place, and the requirements of accreditation and audits. Although we refer to the English translation of Dutch laws, regulations, policies and other documents in English for accessibility, the original Dutch texts are binding. Interfaculty programmes, programmes that are joint degrees with other universities, and programmes that face specific national requirements can encounter conflicting policies. The same holds for service courses and free electives. In these cases, programmes (and courses) make an informed decision on what policy to follow.

2.1 Framework of legal, regulatory and policy documents

1. External requirements

Laws:
• Higher Education and Research Act (WHW),
• General Data Protection Regulations (GDPR),
• Public Records Act (PRA),
• General Administrative Law Act (GALA),

• Act on Equal Treatment on grounds of Disability or Chronic Illness (Wgbh/cz),
• UN Convention on the Rights of Persons with Disabilities (CRPD)
• Accreditation Framework NVAO
• 4TU UTQ Regulations

2. TU Delft policies & regulations

Policies:
↓ TU Delft Strategic Framework
↓ Strategic Priorities 2022-2024
↓ TU Delft Vision on Education
↓ TU Delft Vision on Teaching and Learning (work in progress)

Regulations:
• Model TER & format Annex TER
• Model Rules & Guidelines Board of Examiners
• Online Proctored Examination Regulations
• Rules & Procedures for Examinations
• Examination Appeals Board Regulations

7. University monitoring
• Institutional accreditation/ internal audit
• Annual report ESA
• Annual report Taskforce Regulations

3. TU Delft Assessment Framework

4. Faculty policies & regulations

Policy:
↓ Faculty's didactical concept
• Assessment policy

Regulations:
• TER
• Rules & Guidelines Board of Examiners
• Faculty Regulations

8. Faculty monitoring
• Annual report board of examiners
• Annual educational report of the faculty

5. Programme policies & regulations

↓ Programme assessment plan
↓ Annex TER
• Study guide

9. Programme monitoring
• Accreditation/ midterm evaluation
• Assessment programme evaluation by board of examiners

6. Course assessment

↓ Assessment plan per course
• Assessment blueprint per assessment (exams: assessment matrix; other assessments: consistency check table)

10. Course monitoring
• Course evaluation by ESA
• Course assessment evaluation by board of examiners

Figure 8. Legal framework of the TU Delft assessment framework and its monitoring.

Explanation of blocks: See running text. Single arrows between boxes indicate that the items in the lower box comply with the ones in the upper box. Double arrow between boxes indicate an interaction. Arrows within a box indicate that the next item complies with the previous item. Adapted from Buijns & Kok (2015).[20]

The visual above (**Figure 8**) demonstrates the relation between the following regulations, policy and the **Assessment Framework**:

1. the external requirements for the TU Delft (box 1)
2. the university wide policies and regulations (box 2)
3. **the TU Delft Assessment framework (bar 3)**
4. the faculties' policies and regulations (box 4)
5. the programmes' policies, plans, and regulations (box 5)
6. the assessment in the courses (box 6)

The double arrows indicate that an update in the framework may lead to an update of the central regulations, and changes in the regulations will lead to an update in the framework. The visual also shows how the TU Delft **monitors** the assessment quality and (the execution of) the policies and regulations using:

7. university-wide monitoring (box 7)
8. faculty monitoring (box 8)
9. programme monitoring (box 9)
10. course monitoring (box 10)

In **Appendix B**, the documents that form the legal framework for the assessment policy of the TU Delft are described in terms of type of document, owner, refresh rate and current version. The owner of the document keeps the document up-to-date and fixes inconsistencies. An overview of the tasks and stakeholders in regulations is listed in the RACI in Appendix **D.2** (**Legal framework & TU Delft wide assessment agreements**).

> **condition 6:** **The TU Delft and the faculties ensure that the owners of the assessment documents mentioned in** Appendix B **keep these up-to-date and congruent (consistent with each other).**

All documents mentioned in the framework are published on an accessible place on internet (see **Table 5**), so that teaching staff, students, and other stakeholders can inform themselves of their rights and obligations. Significant changes in the documents are communicated clearly.

> **condition 7:** **The TU Delft and the faculties ensure that students, teaching staff and other stakeholders are informed on their rights and obligations and in changes thereof (see** Table 5**).**
>
> **condition 8:** **The TU Delft and the faculties ensure that the assessments comply with the legal framework as described in** Appendix B **of this framework.**

Disclaimer

The assessment framework summarizes existing regulations, and creates a framework for new regulations and practices. The regulations (see **Figure 8**) are legally binding, the assessment framework and other policy documents are not.

2.2 Accreditation and audits

The NVAO must accredit each (new) programme, before it is acknowledged by the government and before its diplomas will be (internationally) valid. An accreditation is valid for six years.

TU Delft also applies for an institutional accreditation during an institutional audit. By obtaining institutional accreditation, the accreditation process for individual programmes can follow the limited version of the accreditation, since the NVAO relies on institutional quality (assurance system). The institutional audit and the accreditation of individual programmes evaluate assessment and its quality control, which is explained below. Information on the internal quality assurance of the TU Delft can be found in the TU Delft plan for Educational Quality[14].

Institutional audit

Institutional audits focus on answering four questions[10, page 8]:

1. *"Are the institution's vision and policy concerning the quality of the education it provides widely supported and sufficiently coordinated, both externally and internally?*

2. *How does the institution realise this vision on quality?*

3. *How does the institution monitor that its vision on quality is realised?*

4. *How does the institution work on improvement?"*

Since assessment is an important part of our education, an institutional audit will check the following 5 points, which relate to the four standards for institutional audits[10]:

1) Whether the TU Delft has a central assessment policy (this document, standard 1)

1) Whether the TU Delft assessment policy is widely supported (standard 1)
2) Whether the TU Delft has an internal quality assurance system in place to check the assessment quality (standard 1)
3) Whether the assessment policy is realised in an effective manner (standard 2)
4) Whether the TU Delft systematically evaluates whether the intended policy objectives on assessment are achieved and if relevant stakeholders participate in this process (standard 3)
5) Whether TU Delft has a focus on development and on improvement of its assessment (standard 4)

These six questions are addressed in this assessment framework.

> **condition 9:** **The TU Delft ensures that the assessment framework meets and operationalises the requirements of the institutional audit.**

Accreditation

In the accreditation of a programme, assessment is an important subject. Two of the four standards focus on assessment:

Standard 3: The programme has an adequate system of student assessment in place. The student assessments are valid, reliable and sufficiently independent. The requirements are transparent to the students. The quality of interim and final examinations is sufficiently safeguarded and meets the statutory quality standards. The tests support the students' own learning processes.[10]

Standard 4: The programme demonstrates that the intended learning outcomes are achieved. The achievement of the intended learning outcomes is demonstrated by the results of tests, the final projects, and the performance of graduates in actual practice or in post-graduate programmes.[10]

> **condition 10: The faculties ensure in the faculty's assessment policy that their programmes live up to standard 3 (assessment) and 4 (achievement of the programme's final attainment levels) of the assessment framework of the NVAO.**

3. TU DELFT ASSESSMENT AGREEMENTS

This chapter describes TU Delft agreements on assessment. Some of these agreements are specific for the TU Delft. Therefore, this chapter is relevant for new teaching staff and other employees, especially in case they have been working in other universities. Most agreements originate from the models for the Teaching and Education Regulations (model TER, *Onderwijs en Examenregeling* in Dutch) and from the model for the Rules and Guidelines of the Board of Examiners (model R&G, *Regels en Richtlijnen van de Examencommissie* in Dutch). In case the operationalisations differ per faculty or if there are exceptions, this is indicated in the text.

> **condition 11: TU Delft and the faculties ensure that the assessments follow the TU Delft assessment agreements, listed in chapter 3.**

3.1 TU Delft assessment terminology

In this assessment framework, we use the terminology that lecturers and programme management use, to optimise the readability of this document. However, some terminology is different in laws, regulations, and tools. These are discussed below, together with an overview of assessment characteristics. In addition, **Appendix F** contains the following tools:

1) Appendix **F.1**: **Glossary** (assessment terminology with definitions / descriptions)

2) Appendix **F.2**: **Translations English-Dutch** (assessment terminology)

3) Appendix **F.3**: **Acronyms** (often used abbreviations)

Exam, degree audits and Dutch equivalents

In the TER and WHW, 'examination' (Dutch: *tentamen*) is defined as the assessment of an entire course. At the TU Delft and other universities, as well as in this framework, 'exam' (same Dutch word *tentamen*) is reserved for a written or oral exam that takes place in a scheduled time slot and it excludes other forms of assessment and resulting products like reports, presentations, lab work, and projects. In addition, 'an assessment' means a single assessment of any form, while 'course assessment' indicates the total of assessments in a course.

To complicate things, the Dutch word '*examen*' translates as 'degree audit', which is the final check by the board of examiners (or those mandated by the board) whether a student has passed their individual exam programme, which is the student's individual approved list of courses.

Assessment taxonomy

Assessments can be described based on their characteristics. **Table 2** lists the main characteristics of assessments and their possible values. Especially the list of assessment types/methods and their definition can differ between faculties.

Table 2: Main assessment characteristics and values.

Assessment characteristic	Values
Assessment type/method:	presentation, report, essay, written exam, oral exam, portfolio, skill assessment, assignment, take-home exam, video, prototype[t]
Assessment category:	'oral, written, or in another way' ('*mondeling, schriftelijk of op een andere wijze*', art. 7.13 sub 2.l). TU Delft terminology: oral, written, assignment/project
Assessment mode:	on-campus, remote[u], hybrid (simultaneous on-campus and remote assessment)
Assessment schedule:	timeslot (like in written and oral exams), or deadline
(initial) Input format:	paper, digital, 3D, combination
Question type:	open-ended, closed ended (whether students can type their own answer, or have to choose from listed answers).
Answer type:	open-ended, numeric, multiple choice, multiple select[v], true/false, document
Grading method:	manual on paper, manual digitally, fully automated, automated suggestions

For the most common assessment types, **Table 3** shows their main timing, and main fraud prevention/detection characteristics.

Table 3: Main timing and fraud prevention/detection characteristics per assessment type.

	Timeslot	Fraud prevention / detection measures
Presentation	Scheduled timeslot	Plagiarism scan for slides, identity check
Report	Deliverable with deadline	Plagiarism scan[w]
Essay	Deliverable with deadline	Plagiarism scan
Written exam	Scheduled timeslot	On-campus: Invigilators, identity check

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[t] Each faculty will have different values.

[u] Remote and hybrid **exams** are normally not allowed by boards of examiners, except for in lockdown situations or in case of students with specific support needs.

[v] Multiple select: a multiple choice type where multiple options can be selected. Should only be used in specific situations. See here.

[w] 'plagiarism scan' can be digital in case of digital work, but also manual. Assessors always need to be vigilant about fraud by detecting suspiciously similar work or mistakes.

	Timeslot	Fraud prevention / detection measures
		Remote: different exam versions, parameterisation, (random) oral checks, see 3.9
Oral exam	Scheduled timeslot	Identity check
Project	Deliverable with deadline	Supervision, original assignments/research questions
Portfolio	Deliverable with deadline	Plagiarism scan (on written deliverables), reverse image search (on digital graphical deliverables)
Skill assessment	During practical lab session, or at specific moment	Identity check, supervision
Assignment	Deliverable with deadline	Plagiarism scan
Video	Deliverable with deadline	Reverse image search on video stills
Prototype	Deliverable with deadline	Coaching information, pictures of interim materials

Projects: assessments or educational activities

Projects could be considered an educational as well as an assessment method, and it typically contains several assessment method. Some programmes consider projects to be an assessment method on its own, while other programmes consider projects to include multiple assessment methods[x].

3.2 Planning of assessments

To ensure studyability for students (**Quality requirement 6**) and feasibility for teaching staff in terms of time and resources (**Quality requirement 8**), the model TER contains the following agreements on the planning of assessment:

Two opportunities per year (TER art. 17 & R&G 15.2)

Programmes offer two opportunities to take an assessments per academic year. This holds for any type of assessment, unless this is unfeasible for the programme. TER article 17 indicates when (e.g. in which weeks) these two assessments take place. In practice, offering two assessments per year is **only** considered feasible for written exams and oral exams, and **not** for other assessment forms like projects, practicals, and field trips. In the latter cases, programmes offer repair options to minimize study delay (**Quality requirement 6**; for repair options see **4.2**), if this is feasible. The

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[x] Example: If a programme prepares students for writing a thesis in different courses in which students write a report that is assessed on writing skills, they can define 'report' as a separate assessment method that is explicitly mentioned in the assessment programme. This can help to make learning lines more explicit.

programme can set additional requirements to participate in the repair option, but these requirements must be reasonable for the student.

Number of assessments and deadlines per week and per EC

The planning of assessments and deadlines[y] is feasible for students (Quality requirement 6) and focusses on learning (Quality requirement 4). Therefore, the standard for bachelor programmes is to schedule no more than two summative assessments/deadlines per five EC[8,21], and have no more than 2 summative assessments/deadlines per week across courses[8,21], for students who take the nominal course programme. The faculty or programme can deviate from these standards based on their assessment vision, in which case they substantiate this in their assessment policy. For master programmes, programmes create their own policy on the number of assessments and deadlines per week and per EC (see 4.2).

Exam dates and timeslots (TER art. 17)

The TER of a programme specifies when the exam periods are and whether exams can be planned outside the regular exam weeks. Most programmes (but not all) divide their educational periods into 'quarters' that last around 10 weeks (depending on holidays). In case of quartiles, regular exam weeks are the last one or two weeks of the education period (weeks[z] x.9 and x.10, see art. 17.1 of the TER of each programme that lists the periods in which exams can be taken). Depending on the programme's policy, an educational period may have a midterm week (for quartiles: week x.5) during which midterm exams and sometimes resits from the previous period are planned. The summer resit week is scheduled in the third week of the summer period (week 5.3).

During the regular exam weeks (regular teaching weeks x.5, x.9 and x.10, and summer resit week 5.3[aa]), exams are scheduled within the following 3-hour timeslots, on weekdays: 9.00-12.00; 13.30-16.30, and 18.30-21.30. The evening timeslots are only used if no other timeslots are available[bb]. If evening timeslots are inevitable, then they are preferably not used for first year

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[y] Mandatory deadlines are considered summative assessments (or 'examinations' in terms of the TER).
[z] Teaching weeks are numbered *p.w* where *p* is the period number (1-4 are the regular periods, 5 is the summer period that is only used for resits), and *w* is the week number (1-10). September 1st typically falls in week 1.1. See https://www.tudelft.nl/en/student/education/academic-calendar
[aa] There are some exceptions. Examples: EE has two resit weeks in week 5.2 and 5.3; 3mE use eight 'octals' instead of 4 'quarters'.
[bb] Because not all first year bachelor students can be expected to find a room before the start of their first year.

bachelor students. Exams can be shorter than these three-hour timeslots, but not longer (except for students who were granted extra exam time).

Deadlines of deliverables

Deadlines of deliverables (e.g. reports) need to be published in the LMS (Brightspace) by the start of the course (R&G 15.2).

3.3 Written exam specific information: registration

To enable the scheduling of resources that are required for written exams (Quality requirement 8), the following agreements exists in the model TER:

Exam registration (TER art. 13.1 and 13.3)

Students must register for each written exam (via Osiris, the student information system / SIS) in order to be allowed to participate. They will receive an 'examination ticket' by email. Registration opens 56 days before the exam. Students can register up and until 14 calendar days before the day the written exam takes place (TER art. 13.1), except for the registration period for the summer resit, which is up and until 6 calendar days before the written exam. The board of examiners may allow students to participate in the exam in case students failed to register in time due to exceptional circumstances (TER art. 13.3).

Waiting list procedure for exam registration (TER art. 13.2)

After the deadline, students can register for a waiting list (via Osiris) until 6 days before the exam date. The student will receive an 'examination ticket' if there are still places available.

Late access to written exams without registration (TER art. 14.3 and 13.4)

If students do not register in time, they can report to an invigilator at the entrance of the exam room before the start of the exam. In the case that there are places left 30 minutes after the start of the exam[cc], students will be granted late access to the exam.

Registered students who arrive late are allowed to enter the exam hall until 30 minutes after the start of the exam[18].That is why the 30 minute waiting exists. It also is why students cannot use the bathroom during the first 30 minutes of an exam.

[cc] Students who registered for the exam can enter the exam until 30 minutes after the start of the exam.

Exam registration in case of remote digital exams

In case digital exams need to be administered remotely during a lockdown, standard exam registration will be possible until six calendar days before the exam. Since the deadline for the waiting list procedure has already passed, there will be no waiting list procedure. Due to practical constraints to carry out the late access procedure remotely, and the increased chance for fraud during the 30 minute wait period, there is no late access possible.

3.4 Fraud prevention and detection

Fraud is defined as 'any act or omission by a student that makes it fully or partially impossible to properly assess the knowledge, insight and skill of that student or another student'[22].

Fraud prevention and detection helps to ensure that an assessment result correctly reflects how well an **individual** student masters the learning objectives (**Quality requirement 3**, leading to **fairness**). In order to create fair assessment, the TU Delft takes fraud prevention and fraud detection measures[23] that facilitates catching students who commit fraud. This has a preventative effect.[24]

Fraud prevention before an assessment

Fraud prevention starts before the assessment, during the course, using the following principles:

1. Students are much less likely to commit fraud if they are feeling capable of doing the assessment. TU Delft programmes enable students to be prepared for assessments by offering constructively aligned courses and studyable programmes.

2. Students will not commit fraud unintentionally if they are aware of what is and is not allowed and what the consequences are. Therefore, programmes inform students on fraud and its consequences. They also teach students how to reference (and if applicable in the field: cite) properly. Lecturers communicate clearly on what aids, tools, communication, and level of cooperation between students are and are not allowed during an assessment. In case of group work, lecturers inform student about the expected individual contribution and facilitate groups to discuss this regularly to prevent free riding.

Fraud prevention and detection during an assessment

The TU Delft chooses its fraud prevention and detection measures carefully, to optimise student performance. Fraud prevention and detection measures may hinder students to demonstrate their

abilities, for example by causing stress[dd] (e.g. preventing students to access previous questions, and online proctoring). Therefore, these are only applied if necessary. During written exams, the focus lies on preventing the use of unauthorised sources and communication between students, using invigilators and the secure digital exam environment.

In case of unsupervised assessments, oral checks may be carried out in order to

1. ensure that students created their deliverables by showing that they understand the content of what they delivered
2. ensure that students created the output of the tools (like AI tools) themselves.

Fraud detection after an assessment

It is not viable to make assessment fully fraud-proof. That is why fraud detection remains equally important. During grading, assessors are vigilant about similarities between student answers and scores that can be an indicator of fraud in any assessment form, and of the use of unwanted tools or help. Fraud detection is especially relevant for take-home assignments like reports, presentations, essays, and codes. Examiners use the available fraud detection tools to detect suspicions of fraud. Written student work that students produced outside an invigilated exam setting is checked for plagiarism. This includes BSc and MSc graduation work (model R&G art. 7b.1). However, plagiarism scans cannot prove that it was the student who submitted the work.

If examiners detect a suspicion of fraud, they must follow the procedure that their board of examiners has described in the applicable R&G.

3.5 Scoring and grading

For transparent (**Quality requirement 1**) and reliable (**Quality requirement 3**) grades/results, as well as a feasible process for examiners (**Quality requirement 8**) the following agreements are in the model TER:

Scoring

Lecturers score student work (e.g. exam questions or assignments) not only based on whether the final answer is correct, but also take the underlying calculations or reasoning that lead to this final

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[dd] Examples: During lockdowns, 1) some lecturers administered digital exams in which students could answer one question at a time, without the possibility to access previous questions; 2) online proctored digital exams during lockdowns, stress was caused because students e.g. feared that roommates or family members would walk into the room, or that there would be technical error.

answer into account. Partially correct student work is awarded partial scores, unless this is not feasible, or if this conflicts with the learning objectives or the nature of the course. All-or-nothing / binary scoring (full score or no score) results in less precise grades.

Grading deadlines (TER art. 19.1-19.5)

The examiner determines and publishes the result (grades or pass/fail) of written exams as quickly as possible but no later than 15 workings days after the examination (TER art. 19.1). For other assessment forms (oral exams, assignments/projects), TER art. 19 indicates the grading deadlines, which is usually 15 working days.

There are two exemptions to this rule of 15 working days:

1) Examiners need to communicate all Q4 grades before the Friday of week 5.1 (TER art. 19.5).

2) Examiners need to communicate all Q5 grades of first year bachelor courses before the Friday of week 5.4 due to BSA deadlines (TER art. 19.5).

If unforeseen circumstances lead to not meeting the grading deadline, the examiner discusses this with the board of examiners as soon as possible, and communicates the new publication date to the students.

Type of results (R&G art. 14.3)

After completing the assessments of a course, each student will receive a **result** for this course. **Partial results** determine the **course result**. These partial results are the most detailed level that the Rules and Guidelines of the Board of Examiners (R&G) describe. Course and partial results can be grades (numerals), pass (V, *voldaan*) or fail (O, *onvoldoende*) (model R&G art. 14.3).

If a student **does not show up** on an exam or other assessed activity, or **does not hand in** an deliverable, the examiner must register *NV*[ee] for this assessment (which is **not a result** and therefore cannot be appealed):

NV	no show	*niet verschenen*	if a student registered for an assessment but did not

---

[ee] At IDE, a 'NI' (*niet ingeleverd*, not delivered) is chosen if a deliverable was not delivered (in time).

show up / did not hand in their work (in time)[ff].

If the grades or pass/fail results are too low to pass the course (or NV), Osiris will automatically determine the following **course result:**

NVD	did not pass	*niet voldaan*	course result if a student did not receive sufficiently high assessment results, or received an NV: Osiris will automatically determine the course result as NVD.

The board of examiners can decide to grant **exemption** for certain courses, in which case they register VR at course level in Osiris:

VR	exemption	*vrijstelling*	if the board of examiners granted exemption for a course

Meaning of grades (model R&G art. 14.4)

Grades are expressed on a scale from 1-10 (model R&G art. 14.4). The meaning of grades is (model R&G art. 14.4):

9.5-10.0	excellent	*uitmuntend*
8.5-9.0	very good	*zeer goed*
7.5-8.0	good	*goed*
6.5-7.0	more than satisfactory	*ruim voldoende*
6.0	satisfactory	*voldoende*
4.5-5.5	nearly satisfactory	*onvoldoende*
3.5-4.0	poor	*slecht*
1.0-3.0	very poor	*zeer slecht*

Grade calculation

The faculty policy contains guidelines on grade calculation (see 4.1).

[ff] Example: if students participate in a project/computer lab, but do not hand in the summative assignments (in time).

Rounding of grades (R&G art. 14.4 and 14.6)

Course grades are calculated with a precision of .5 (model R&G art. 14.4 and 14.5) on a scale of 1-10 (R&G art. 14.4). The minimum pass grade of a course is 6.0 (model R&G art. 14.4). This implies that the **minimum pass grade before rounding is 5.75**[gg].

A course grade can either consist of the result of a single or multiple assessments. In the case of multiple assessments, the resulting individual grades are called **partial grades**[hh]. Partial grades are calculated with the precision of one decimal (model R&G art. 14.6, first bullet).

Each board of examiners decides what the **minimum partial grade** is to receive a course grade in their Rules and Guidelines. Typically, the minimum partial grade is 5.00 (model R&G art. 14.6, second bullet), but it can be higher. In some cases, there is no minimum partial grade.

In case students do not reach the minimum partial grade, or did not receive a partial grade, the course result will be 'NVD' (did not suffice, *niet voldaan*).

Multiple attempts: highest result counts (R&G 14.8)

In case of multiple attempts for a course or an assessment[ii], the highest result counts[jj] (model R&G art. 14.8) and is used for the degree audit. In the rare case that students receive a (numerical) grade one year, and a pass/fail result in another year, passing grades (≥ 6.0) are regarded as 'higher' than pass/fail results[kk].

Registration and publication of results

Course results are registered and published in Osiris. It depends on the programme whether partial results (i.e. result of single assessments) are registered in Osiris. If not, they are published on Brightspace (model TER art. 19.3-4 and model R&G art. 15.1).

[gg] This has at least been the case since 2006. In other Dutch universities, a (rounded) 5.5 is considered a pass grade.
[hh] In de model TER and model R&G, the term 'interim examination' is used. The term 'interim' is very appropriate for midterm exams that test the first half of course as apposed to the final exam that tests the entire course. However, for courses that consist of an exam and a practical, the term 'interim' is not appropriate. Therefore, we use the more neutral term 'partial' here.
[ii] In some programmes, the regular assessment of a course consists of a midterm and final exam, while the resit consists of one large exam that covers both regular exams. This is typical for BSc year 1 courses.
[jj] This has at least been the case since 2006. Other Dutch universities keep the last grade.
[kk] During the pandemic, the results of some online exams were changed into pass/fail instead of grades because of the lower reliability. This arose the question of whether a 'pass' was considered higher than a 6.0 or not.

3.6 Test result analysis to adjust grading guide & grades

The faculty's assessment policy (see **4.1**) describes how lecturers are advised/required to do a test result analysis to check for the need to adjust the answer model or grading guide/assessment sheet (see **1.3**). The policy also describes in what case what methods examiners should use to adapt the grade calculation and/or the cut-off score[ll]. This is to ensure the reliability (**Quality requirement 3**) of grades/results.

3.7 Communicating grades & feedback, student review & discussion of assessed work, appeals and the validity of results

The model TER includes processes that stimulate learning from assessments (**Quality requirement 4**) by giving students the right to review. In addition, it includes processes to ensure fairness of grading by giving students insight in their scored and graded work (**Quality requirement 1**) and by the appeal process in case students do not agree with their result.

Right to review (TER art. 20)

Students have, for a period of 20 working days after notification of the results, the right to review ('inspect' in the TER) their marked work. The course examiner can schedule a (group) meeting during which the review will take place.

Right to discussion (TER art. 21)

Students can ask to discuss a (partial) result (grade or pass/fail) for a period of 20 working days with the examiner after notification of the results. The course examiner can schedule a (group) meeting during which the discussion will take place, after which students are still allowed to request an individual discussion on the motivation of the grade.

Lodging an appeal with the Examination Appeals Board & emergency procedure

If students do not agree with the final course result, they can lodge an appeal with the Examination Appeals Board[mm][25] (EAB, *College van beroep voor de examens, Cbe*). The student can only lodge an appeal **after** the examiner has determined the entire course grade and announced this

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[ll] The Cohen-Schotanus procedure is advised for score-grade calculation adjustments, but not in resits (because the student population is not representative). 3mE uses Angoff cut-off score calculation beforehand combined with Hofstee cut-off score adjustments afterwards. See TU Delft assessment manual.[16]
[mm] In case students appeal against course results to their BoEx, the BoEx is legally obliged to forward the appeal to the EAB. After receiving the appeal, the EAB will request the BoEx to mediate between the student and the examiner.

(via Osiris). The student can lodge an appeal within 6 weeks after announcement of the course result.

In case time is of the essence, students can ask for an **emergency procedure at the EAB**. This is for example the case if students are excluded for a second partial assessment (i.e. failed the entire course) based on the results of a first partial assessment.

Validity of assessment results (TER art. 22.1)

Assessment results are valid indefinitely (TER art. 22.1), unless the dean decides that the assessed knowledge, insights, or skills are proven to be outdated. The validity of partial grades is limited in the programme's TER (model TER art. 22.4 limits the validity of partial grades). Not all TERs determine a maximum period of validity, in which case partial results are valid indefinitely.

3.8 Ownership and archiving of assessments and student work

Guidelines for archiving educational data

The binding guidelines for archiving and destroying educational related student data[26] are published here, including retention periods, and how to archive and destroy data. The guidelines are applicable to educational data produced by teaching staff or students, and therefore include formative and summative assessment, like graduation work, feedback on student work, completed assessment forms, and test result analyses.

The main guidelines are summarised here:

1. Store data in the format in which the student originally handed it in:
   a. Digital-born data
   b. Paper-born data: even after scanning, the original paper should be stored
   c. 3D-data
2. Adhere to the minimum and maximum retention period (see the four main periods below, and the teaching support site for a complete overview).
3. TU Delft archives student work in centrally supported educational tools (including assessment tools, see 1.4):
   a. If students deliver work there, the application owner (ESA-IM or IT) is responsible for archiving and destruction
   b. If students deliver work elsewhere, the examiner is responsible for archiving and destruction
4. All student work and feedback/grades are considered sensitive personal data.

5. Store sensitive personal data in a secure place (see Teaching Support site for concrete advise).

6. Anonymize data exports from educational tools (e.g. test result analyses).

7. The student has the right of access to their work due to the GDPR and archive law and therefore can request to see the work during the retention period.

8. Summative (3D) work should **not** be returned to the student before the end of the appeal period (6 weeks after the student has received the course result), because returning the work earlier hinders the appeal process[nn].

9. Physical formative student work (on paper and 3D) is returned to students together with feedback. If this feedback is written on paper (paper-born), the feedback is given to the student, while digital-born feedback is communicated via and stored in the LMS (Brightspace) or a centrally supported (assessment) tool.

The **retention and destruction periods** of assessment related documents that examiners and students produced are [published on the teaching support site](), together with background information. This information complies with the following regulations from the legal framework:

1) Examiners archive the **assessment, corresponding grading guide[oo] and score-grade transformation** for **seven years** after the assessment date or deadline (SL proc. 54[27]).

2) Examiners archive **student work and assessor annotations/feedback** on student work for **two years** after the exam date (model R&G art. 16.1, SL proc. 54) and destroy it within three years after the exam date. This includes completed rubrics and assessment forms.

3) Examiners must retain **three-dimensional** projects for **six weeks** after the examination date or the date on which the results were published (model R&G art. 16.3, SL proc. 54) and destroy it after 3 months, after enabling students to pick up their work.

4) The faculty archives students' **graduation work for at least seven years after graduation** (model R&G art. 16.2, SL proc. 54), including the completed grading guide/rubric and assessment form. The faculty archives the underlying graduation manual, rubrics/grading guide and assessment form for at least seven years, too.

[nn] Student work could be altered after returning it to the student, which hinders e.g. a second opinion.
[oo] Examples per assessment category:
- exam: exam, answer model (including grading guide)
- oral exam: used questions, cases, scenarios, etc.; grading guide/rubric/assessment form
- project/assignment: manual, mandatory template, rubric, assessment form

Access to assessment data

Examiners are responsible for adequate and restricted access to *all* assessment data in their course. Within a course, the examiner gives course staff members access to assessment data that is relevant for their assessment related tasks. If the board of examiners (WHW art. 7.12c, sub 2) requests data on assessments, the examiner will provide the requested information. In case the examiner asks advice from an assessment advisor for which student data is needed, they preferably only share anonymized student data, or use screen-sharing to minimize the distribution of personal data. In case of changes in teaching staff, functional admins or exam support officers give the new teaching staff access to course data.

Privacy and security

Any student products and the resulting feedback, scores and grades contain sensitive personal information. It is therefore important to save this data securely and prevent the data from being available to unauthorized people, and to destroy the data after the legal retention period. This is the case for summative assessments, but also for formative assessments and learning activities. Students and others should not be able to see each other's assessment results.

In addition, data on special provisions for individual students during assessments (e.g. extra time) are considered health-related data and are therefore 'special category of personal data' according to the GDPR Implementation Act. These data should be handled with extra care.

3.9 Guidelines remote assessment & fraud prevention

In the case remote assessment is needed, the TU Delft delivers good quality assessment (the quality requirements in **1.2**) and specifically a healthy balance between 1) quality assurance (fraud prevention measures, **Quality requirement 3**), 2) privacy concerns, 3) enabling students in demonstrating how they master the learning objectives (**Quality requirement 2** & **Quality requirement 7**), and limit stress for students (**Quality requirement 6**). This has resulted in limiting the use of online proctoring in remote assessment as laid down in the online proctoring regulations[19]. Online proctoring can only be used in exceptional cases where other remote fraud prevention measures are insufficient and where remote assessment is the only option, and only after approval from the concerned board of examiners. This can be the case in specific individual cases, like students who cannot come to the exam hall due to chronic health issues (**Quality requirement 7**).

For remote assessments, the following **guidelines for remote assessment**[28] apply:

1) The assessment **assesses all learning objectives in a reliable way** (**Quality requirement 1** & **Quality requirement 2**).

2) **Fraud prevention measures** do not hinder **student performance** (**Quality requirement 3** & **Quality requirement 6**), i.e., aims to limit stress for students in these assessments.

3) **Helpdesk**: the examiner is available for students during the assessment.

4) **Practice exam**: The examiner provides a practice exam to enable students practice with the setting, questions & tools (**Quality requirement 1** & **Quality requirement 3**).

5) **Feasible**: The assessment is feasible for both students and lecturers (**Quality requirement 6**, **Quality requirement 8** & **Quality requirement 9**).

6) **Extra time**: Students with disabilities receive the required extra time (**Quality requirement 7**).

7) **Privacy**: The assessment complies with the privacy regulations.

8) **Transparency**: The examiner communicates assessment details to the students via the LMS (Brightspace) and email (**Quality requirement 1**).

3.10 Guideline for use of (AI) tools in assessment

Below, the initial 8 guidelines for teaching staff (June 2023) on the use of (AI) tools by students in non-invigilated assessments are listed. The guidelines are in development. On this page, a more extensive and recent version can be found.

These guidelines are only relevant outside exam-like environments, in which students will likely use available (AI) tools.

1. **Discover the possibilities and limitations** of (AI) tools and discuss them with the students.
2. **Promote safe use** of AI tools and plugins and **do not reveal** personal, internal or confidential information.
3. **Be transparent and explain choices**. Discuss with students how they can follow the Code of Conduct[29] in the context of AI tools. Communicate changed expectations to students.
4. **Attribute correctly**: Inform students on how they should correctly attribute the use of AI-tools.
5. **Reduce the need of students to rely on AI tools by making them feel confident**: Have sufficient feedback moments and regularly check the progress of individual students.

6. **Focus on the students' process** if the course is heavily influence by AI tool use**:** Shift assessment criteria towards the process, track progress using version control.
7. **Take fraud detection measures & report suspicions of fraud** to the board of examiners: Consider doing oral authenticity checks to check if it is likely that the student produced the deliverable by themselves.
8. **Rethink the course**, including learning objectives and course assessment plan[pp].

3.11 Assessment adaptations for students with a support need

Students who encounter obstacles during assessments due to e.g. functional limitation, disability, chronic illness, psychological problems, young parenthood, gender transition, or special family circumstances may request adjustments of assessment (TER art. 25, **Quality requirement 7**), after consultation of Horizon (desk for studying with a disability or extra support question) for **standard support facilities**, or their academic counsellor for **customised adjustments**.

Standard assessment support facilities include 10 minutes per hour extra exam time for students with e.g. dyslexia. **Customised assessment adjustments** depend on the individual situation of the student and may include changes in assessment type, timing, permitted aids (e.g. dictionaries) and location (TER art. 25.4). This includes exemptions from attendance requirements.

For **customised assessment adjustments**, the board of examiners (or the mandated academic counsellors in some faculties) will evaluate the student requests on the following criteria[30]:

1. If possible, the adjustment must still allow assessment of the learning objectives of the course at the required level. If this is not possible, individual degree programmes of students should still cover and assess all final attainment levels of their degree programme (TER art. 25.1).
2. The adjustment must be efficacious for the student: it should be suitable and necessary (Wgbh/cz[31] art. 2.1).
3. The adjustment should not place a disproportionate burden on the faculty / TU Delft (Wgbh/cz art. 2.1), in terms of time and money[32].

[pp] For group work / projects, consider e.g. checking the transfer of skills & knowledge by adding an individual exam on project related cases. However, consider study load as well.

3.12 Composition of assessment committees for graduation projects

The board of examiners establishes rules on the composition of the assessment committee for the graduation project in order to secure assessment competence (see **6.3** for examples & guidelines, model R&G art. 25).

3.13 Graduating with honours or cum laude

Guidelines honours certificate

The board of examiners publishes guidelines for granting an honours certificate to students who participate in an honours programme in the Rules and Guidelines (model R&G art. 29).

Guidelines for granting 'cum laude'

The board of examiners publishes guidelines for granting the predicate 'cum laude' in the Rules and Guidelines (model R&G art. 30) on three criteria: average grade, study duration and grade for graduation project. In addition, the R&G may limit the number of ECs for which students may receive an exemption or 'pass' (model R&G art. 30.1.b).

4. ASSESSMENT POLICIES IN THE FACULTY

This chapter describes how the faculties' assessment policies relate to the TU Delft vision on assessment (chapter 1), TU Delft wide assessment agreements (chapter 3), and how the policies can be divided into faculty level (4.1), programme level (4.2), and course level (4.3)[gg].

4.1 Faculty assessment policy (faculty level)

Faculty assessment policies show how the TU Delft assessment framework is operationalised and integrated with the faculty's vision on education, regarding the topics below. The operationalisation of these topics should comply with the content of this assessment framework, and especially with the **TU Delft assessment agreements** in chapter 3 and the quality requirements for assessment in 1.2. If programmes within a faculty differ in vision on education and in nature, the faculty could create only assessment policies on programme level instead of on faculty level. In that case, the faculty's assessment policy lists the programmes' assessment policies. If there **is** a faculty assessment policy, each programme will list their (more detailed) agreements in a programme specific assessment policies. These are discussed in **4.2** under '**Programme specific assessment policy**'.

> **condition 12: The directors of education ensure that their faculty has an up-to-date assessment policy which is in line with the TU Delft assessment framework and that operationalises the topics listed in** 4.1**.**

The faculty's assessment policy addresses the following:

- **Vision on assessment** and its relation to the faculty's vision on education, including the role and goal of and relation between summative assessment, formative assessment, feedback, and learning activities (see **1.1** for the general TU vision).
- **Assessment policy**, which at least includes guidelines / quality requirements for the assessment methods in the faculty, including graduation projects. The assessment policy complies with the three values and resulting 9 guidelines listed in **1.2**, the TU wide assessment agreements, and the legal framework of the TU Delft and the faculty.
- **Assessment procedures:** how lecturers in the faculty deal with specific aspects of assessments. At least, the following procedures/guidelines are described:

[gg] Interfaculty programmes, programmes that are joint degrees with other universities, and programmes that face specific national requirements can encounter conflicting policies. The same holds for service courses and free electives. In these cases, programmes (and courses) make an informed decision on what policy to follow.

- **Four-eyes principle**: How the four-eyes principle is implemented and who provides the second pair of eyes (e.g. peers, assessment expert) during:
    - the development of the course's assessment plan,
    - the development of assessment for the different types of assessment (e.g. peer review of exams, project manuals, and rubrics), and/or
    - the assessment of student work in different types of assessment (e.g. how many assessors assess exams, assignments and presentations, and does this number depend on the amount of ECs in the assessmentECs).
- Other procedures that ensure **objective assessment**: How the faculty strives for objectivity during assessments, in addition to the four-eyes principle. Example: guidelines for calibrating the assessment of projects with the assessors, mandatory use of rubrics, requirements for rubrics[rr], etc.
- **Score-grade transformation / cut-off score**:
    - For exams, the formulas/procedure for score-grade transformation and/or for the determination of the cut-off score, with and without guessing correction.
    - Guidelines on in what cases the score-grade transformation may be adapted (standard: only adapt regular assessment, not resits).
    - Where the score-grade transformation and (if applicable) its adaptation is registered (e.g. cover page exam/assignment description, LMS (Brightspace) announcement if changed).
- **Test result analyses and follow-up action**: Whether and how to execute test result analyses and what the required follow-up actions are per assessment type.
- **Student inspection of graded assessments**: How to organise student reviews of graded assessments.
- **Resits and repairs**: What the policy on offering resits (for exams and presentations) and repairs (e.g. revisions to written deliverables, or additional or replacing assignments for projects, reports, field trips) is, and whether there are restrictions on access, or on the grade that can be achieved. Examples: only access to additions/revisions if a minimum grade was achieved in the regular assessment; maximum grade for the addition/revision due to receiving extra feedback and time.

[rr] Rubrics at least consists of descriptors per criterion of the following two levels: a) the level of just sufficient (the equivalent of a 6) and b) the level of the learning objectives (the equivalent of a 10). If applicable, it includes knock-out criteria and their required minimum level in order to qualify for feedback and/or grading. See TU Delft assessment manual[16].

- **Fraud and plagiarism:** How to prevent and detect fraud and plagiarism.
- **Archiving:** How and how long to archive assessments, student work, and feedback within the national and TU Delft guidelines (see 3.8).
- **Student assistants / teaching assistants** (synonyms): How and under which conditions teaching assistants (TAs) can be involved in assessments: limitations on tasks that TAs are allowed to carry out, mandatory trainings for TAs in relation to these tasks, etc.
- **Change of assessment**: How to change the assessment in a course: what is the procedure to change the assessment in a course before and after the publication of the assessment in the study guide? Who needs to give approval and who needs to be consulted? What is the timeline?
- **Recycling previous assessments**: If and under what conditions exam questions and projects/assignments can be recycled.
- **Graduation projects**: policy concerning the assessment of the BSc and MSc graduation projects and/or other significant projects.
- **Special provisions:** description of the organisation and (referral to) procedures for special assessment provisions for students with e.g. a disability or chronic illness.

- **Assessment organisation:** lists the roles and responsibilities concerning assessments in the faculty, including the accountability and responsibility for the implementation of the assessment policy. This part will be in line with 5.1, and Appendix D.
- **Assessment competence and professionalization**: description of mandatory assessment courses for certain functions (UTQ), and a description how the faculty stimulates assessment professionalization for examiners and other stakeholders.
- **Quality assurance of assessments** by the board of examiners and the faculty's educational management. It should describe the following aspects of **assessment reviews** of both course assessment as well as of graduation projects & degree audits:
  - Who conducts the assessment reviews[ss]?
  - What is the standard frequency for the reviews (minimum every 6 years)?
  - What events trigger[tt] extra reviews?
  - What is the assessment review method?
- **Action plan: t**he plans and actions concerning assessment quality for the coming 6 years.

[ss] Examples: assessment committee of the BoE, assessment expert on behalf of the Educational Management Team
[tt] Examples: extremely high or low pass rates/average grades, complaints, reported exam incidents, etc.

- **Formats of the faculty:** the formats that the faculty uses to monitor the consistency of their education and assessments on the three levels (programme, course, and assessment). See Appendix **C.1** for a list of examples of formats.

4.2 Programme assessment plan (programme level)

Each bachelor and master programme has a curriculum that contains a combination of assessment methods that has been composed in a well-considered and motivated manner. This combination of assessment methods is called 'the programme assessment plan'. It is linked to the final attainment levels, (FALs, also called 'intended learning outcomes' / ILOs, or 'exit qualifications') of the programme. The format of the programme assessment plan can be part of the faculty's assessment policy.

> **condition 13: The programme directors ensure that their programme has an up-to-date programme assessment plan that is in line with their faculties' assessment policy, and that operationalises the topics listed in** 4.2**.**

To ensure that:

- The programme assessment plan covers all FALs[33]
- The programme assessment plan has appropriate assessment methods for the FALs
- Individual graduates master the FALs
- The planning of assessments and deadlines is feasible for students and focusses on learning, has (in the BSC programme) no more than 2 summative assessments/deadlines per 5 EC[8,21], and has no more than 2 summative assessments/deadlines per week[8,21], unless the faculty or programme deviates from these standards as described in their assessment vision and policy

A programme assessment plan contains at least:

- Overview of FAL contribution per course, preferably based on the courses' assessment plans and taking the taxonomy level into account (see **4.3**)
- Overview of assessment methods per course, preferably per FAL
- Overview of percentage of individual grading per course
- Overview of spread of assessments and deadlines over the year

Programme specific assessment policy

In order to give students uniform and fair assessment experiences throughout the programme, and to ensure that lecturers demonstrate a uniform feedback culture[d] for students, programmes create

a programme specific policy on the topics below to facilitate a consistent assessment experience within the programme. Faculties and programmes can choose to describe these topics in the faculty's assessment policy instead.

- **Formative assessment policy**: how the programme defines and uses formative assessment within the didactical concept of the programme: the goal and role of formative assessment and feedback over courses of the programme[uu], the number of formative assessments, etc.
- What **assessment types** the programme distinguishes and uses (see 3.1, Assessment taxonomy).
- Policy on **open-book and/or closed-book exams**: when are closed-book exams appropriate, and in what cases could students have access to paper/digital books, dictionaries, formula sheets, or internet[vv].
- How the programme ensures that course grades reflect the performance of **individual** students, also in case of group assignments[ww].
- What the **repair possibilities** are in case of a failing grade for exams (resit) and other assessments like projects, practical/programming/etc. labs, field trips, etc. (additional assignment, new versions), and whether there are e.g. entry requirements[xx], standard deadlines/plannings or maximum grades for these repairs.
- **Spread and number of assessments/deadlines**: maximum number of assessments and deadlines per EC and per week for students without study delay.
- **Deadline policy for individual students**: Extending a deadline for individual students is formally the same as providing an extra examination opportunity, for which the board of examiners should give permission. This can only occur in case of exceptional, personal circumstances, and only after a visit to the academic counsellor and an application to the BoEx. In case of other arrangements (e.g. specific procedures in which someone else is mandated to make a deadline decision based on clear guidelines), include this in the programme specific policy.

[uu] Example: In the first semester of the bachelor, weekly homework counts for 10% of the final grade so that students pick up the required speed of studying. In Q3, students receive SA feedback on their voluntary homework. In Q4, students give each other good quality peer feedback on their homework assignments.
[vv] If students need to replicate knowledge or procedures according to the learning objectives, closed-book can be more appropriate (perhaps with a formula sheet), while in case of questions at the application, analysis, evaluation or create level, open-book exams can be more appropriate.
[ww] Examples: Minimum percentage of individual grading per course; Group assignment has an individual component
[xx] Examples:
  o entry requirement for repair possibilities: minimum grade of 4.0
  o maximum grade for repair possibilities: maximum grade of 6.0

- **A format for the assessment plans of courses** (see **4.3**, only if there is no such format on faculty level).
- What **taxonomy/taxonomies** the programme uses. Standard taxonomy is the TU Delft adaptation of Bloom's Taxonomy[34].

4.3 Course assessment plan

> **condition 14: The course examiners ensure that their course has an up-to-date course assessment plan that shows how the learning objectives are assessed formatively and summatively. The course assessment plans are in line with the applicable programme assessment plan and faculty assessment policy, and operationalise at least the topics listed in** 4.3**.**

Course assessment plan

Each course has an assessment plan. A summary of the assessment is published in the study guide. The examiner communicates details of the assessment before the start of the course via the LMS (Brightspace) and typically discusses these during the first lecture of the course. The format of the course assessment plan can be part of the faculty's assessment policy and/or programme's assessment plan.

A course assessment plan contains at least:

- The learning objectives, properly formulated:
    - o LOs are formulated on the appropriate level of the taxonomy in use by the programme.
    - o It should be clear to what FAL the LO is contributing.
- An overview of formative and summative assessment method(s) that demonstrate
    - o which LOs are covered by which assessments,
    - o which LOs contribute to which FALs, and
    - o that students get feedback on each LO performance before each summative assessment and that this preferably happens during formative assessment, and otherwise at least during learning activities.
- How the final grade is calculated,
    - o in case the student receives a passing grade in one go, and
    - o in case the student needs to repair a failing grade.
- In what week the summative and formative assessments and deadlines are planned.

- What the repair possibilities (resit, additional assignment) are for students with failing grades and whether there are e.g. additional entry requirements or maximum grades for these repairs.

4.4 Graduation projects

> **condition 15: The programme directors ensure that their graduation projects have an up-to-date graduation manual that is in line with the programme assessment plan and with regulations. The manual contains the topics listed in** 4.4**.**

Each graduation project has a graduation manual for students that is in line with the programme's programme assessment plan. The graduation manual contains at least the following summary of the information and regulations concerning the graduation project:

- **Learning objectives** and **assessment criteria**
- **Information on assessment**, including (hyperlinks to) the **rubric** (synonym: *grading guide*) and **assessment sheet**, information on feedback during the midterm[yy] (interim evaluation and/or feedback moment) and greenlight **evaluation**, and information on **plagiarism**
- **Responsibilities** of the course coordinator, the student, and members of the graduation team (assessors, supervisors, mentors, etc.) with respect to supervisions, feedback and the assessment during the project
- **Planning & procedures**, phases, and deadlines of the project. This can include registration, preparation, kick-off, midterm (interim evaluation and/or feedback moment), greenlight, presentations, final assessment, meetings, milestones, etc.

[yy] The term 'midterm' in the context of graduation projects refers to an interim evaluation.

5. ASSESSMENT ORGANISATION

The goal of this chapter is to show how the assessment organisation facilitates good quality assessment. A prerequisite for the implementation of assessment policies and therefore for good quality assessment is that the tasks and responsibilities of the assessment stakeholders are clear, which is discussed in section 5.1. More details, including the accountable person per task and who needs to be consulted is listed in the RACI[zz] matrices of Appendix D. Section 5.16 discusses the support of stakeholders during the execution of their tasks.

5.1 Tasks and responsibilities of main assessment stakeholders

This section and sections 5.2-5.14 describe the responsibilities and tasks of the main stakeholders of the assessment process (see Figure 9), in order to contribute to the following condition:

> **condition 16: TU Delft, the faculties and the boards of examiners ensure that the tasks and responsibilities of the different stakeholders with respect to assessment are clear.**
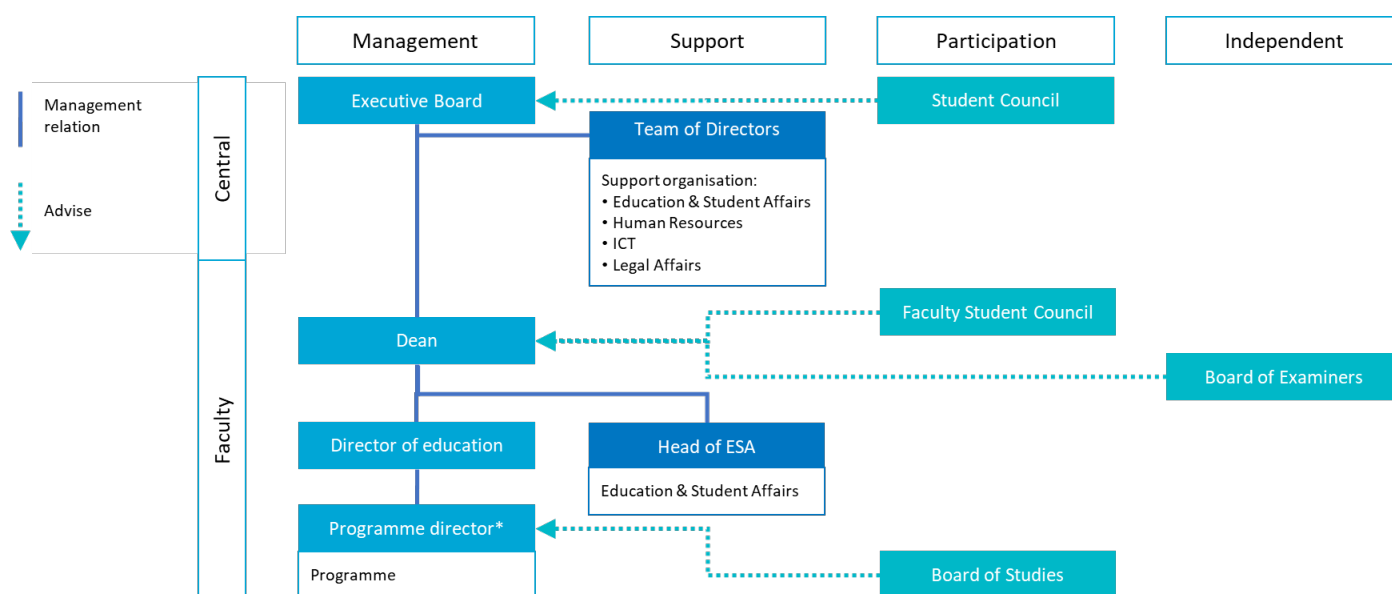
Figure 9. Schematic organisation at the TU Delft.
Assessment management, support, and participation at central and faculty level. Officially, the faculty student councils and boards of examiners advice the dean. However, directors of education can take deans' role for assessment since they are responsible for education. See Appendix E for differences between faculties.

[zz] RACI matrix: matrix that indicates per task who is Responsible (i.e. who needs to take action), who can be held Accountable, who needs to be Consulted, and who needs to be Informed.

The main tasks related to assessment are summarized in **Figure 10** and are described in more detail in sections **5.2**-**5.9** and **5.13**.
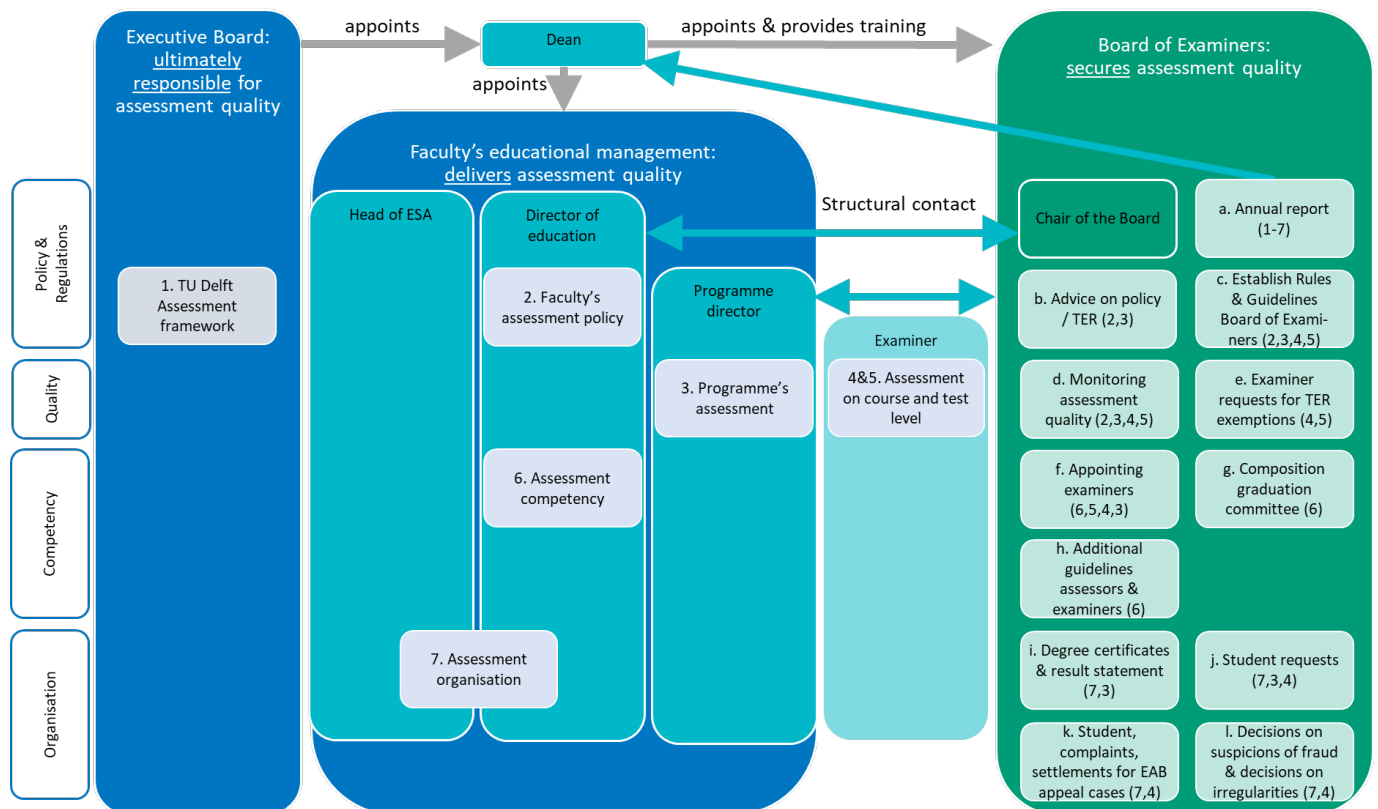
Figure 10. Assessment responsibilities - division of main assessment responsibilities between Executive Board, faculty's educational management and boards of examiners.

This diagram indicates which main stakeholders (dark and light blue & green boxes) are responsible for which assessment building block (grey blocks, numbered 1-7, see **Figure 1** / **Figure 4**), and board of examiners tasks (light green blocks, see running text in next section for description). Adapted from van Zijl & Jaspers (2012, 2014)[35][36]. See running text in **5.8** for more information on the division of responsibilities between the board of examiners and the faculty.

* Programme director: Synonym: 'director of studies'. **Sub-boards of examiners appoint examiners in the faculties AE, AS, CEG and EEMCS.

5.2 Executive Board (tasks and responsibilities)

The Executive Board[37] (EB)

1. provides the assessment framework that the faculty's assessment policy must comply with, and monitors the compliance
2. establishes the model TER and model R&G
3. ensures the professional development of the members of the boards of examiners (by providing a yearly training, and via knowledge exchange in the meetings of the chairs of the BoExs and secretaries to the BoEx, respectively)
4. ensures a training offer to support examiners (including the offer by TLS)

1. ensures good logistic support of the exam process (see **D.1**, **D.3,** and **D.4**)
2. ensures a possibility of appeal for students by establishing an Examination Appeals Board (EAB, Dutch: *Commissie van Beroep van de Examens, CBE*)[25]

5.3 Student Council (tasks and responsibilities)

The Student Council

1. advises on the TU Delft assessment framework because it is an educational policy document
2. advises on educational and therefore also on assessment topics, with and without request from the Executive Board

5.4 Deans (tasks and responsibilities)

The dean[38]

1. establishes the TER on a yearly basis, considering the provisions in the model TER and other guidelines of the EB (model FR 3.2.a)
2. monitors the execution of the TER and reports on this to the EB (model FR 3.2.d)
3. establishes the board of examiners per programme or group of programmes (model FR 3.2.e), and if applicable sub-boards of examiners
4. appoints members of the (sub-)board(s) of examiners after consulting the current members of the BoEx (WHW art. 7.12a sub 4, model FR 3.2.e)
5. ensures that the board of examiners can work in an independent and expert manner by appointing well-qualified members, ensuring that time spent for the board of examiners is recognised in R&D talks and by providing sufficient secretarial support. Discusses improvements based on the annual report of the board of examiners
6. ensures that the departments carry out the HR and training policy of the faculty regarding examiners

5.5 Heads of Education and Student Affairs in the faculty (tasks and responsibilities)

The head of Education and Student Affairs (ESA) in the faculty

1. ensures good organisation and support[aaa] of exams and other assessments, together with the director of education (EMR 24a sub 5 and model FR 4.4-4.5.a). If applicable, this includes faculty specific assessment tools or assessment supporting tools.
2. ensures professional support and advise for the board of examiners, the programme director(s), and the responsible examiners

5.6 Directors of education (tasks and responsibilities)

The director of education

1. establishes the assessment policy of the faculty (Executive and Management Regulations, EMR[bbb] art. 24a sub 2a) after considering the advice of the board(s) of examiners, the board(s) of studies, and faculty student council (FSC)
2. is accountable for the implementation of the assessment policy and the monitoring thereof
3. monitors and develops the didactical qualities of teaching staff in the faculty (EMR 24a sub 2d and model FR 4.5.d)
4. ensures good organisation and support[ccc] of exams and other assessments, including the supporting software tools, together with the faculty's head of ESA (EMR 24a sub 5 and model FR 4.4-4.5.a)
5. ensures that there is a quality assurance system to evaluate the quality of the programmes and their constituent courses, including their assessment (model FR 4.5.a)

5.7 Programme directors (tasks and responsibilities)

The programme director[ddd, eee]

1. is responsible for executing the assessment policy in their programme

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[aaa] It depends on the faculty how this support is organised, see Appendix E.
[bbb] Dutch: *Bestuurs- en beheersregelement TU Delft (BBR)*
[ccc] It depends on the faculty how this support is organised, see Appendix E.
[ddd] 'Director of studies' is a synonym of 'programme director' that is used at AE, AS, EEMCS, CEG (see Appendix E).
[eee] At IDE, AE and 3mE, the role of programme director is shared within the 'board of education'. It consists of all programme directors, the director of education and in case of 3mE and IDE also of the faculty's head of ESA. See Appendix E.

2. is responsible for formulating the final attainment levels (FALs, synonyms: intended learning outcome / ILO, exit qualification) of their programme

3. is responsible for ensuring that their programme meets the standards of the assessment framework of the accreditation

4. is responsible for the content of their programme (courses, EC, learning objectives) and ensures that the combination of courses that form the programme meets its FALs

5. ensuring that their programme has an up-to-date assessment programme that is in line with the faculty's assessment policy

6. consults with the BoEx, the board of studies and the faculty student council on the assessment agreements and the programme assessment plan

7. consults with department chairs on the contribution of departments to the programme and makes decisions on their contribution[fff] (model FR art. 6.5.c)

8. Programme directors are called 'directors of studies' at CEG and TPM. At IDE, AE and 3mE, the entire educational management team (AE and 3ME) or the entire board of education (IDE) has the responsibility of the programme director as described above.

5.8 Division of assessment responsibilities between faculties and boards of examiners

The division of assessment tasks between the director of education (and their educational management team) and the BoEx is often summarized by stating that the director of education is responsible for **delivering** good quality assessment and that the board of examiners **secures** that the quality of assessment is up to standards. **Figure 10** shows this division of responsibilities between delivering and securing (Dutch: *zorgen en borgen*).

A division of tasks and responsibilities between stakeholders for written exam process that are administered on campus, remote and hybrid is listed in **D.4** (**Central & faculty organisation of scheduled exams**).

[fff] At IDE, EEMCS and 3mE, this responsibility is divided differently. See **Appendix E**.

5.9 Boards of examiners (BoEx, tasks and responsibilities)

> **condition 17: The boards of examiners secure that graduates meet the final attainment levels of the programme by executing their legal tasks, listed in** 5.9.

The board of examiners (BoEx) is an independent committee that has a broad set of tasks and responsibilities, which are detailed in the green block on the right of **Figure 10**. The tasks and responsibilities that specifically focus on the assessment of a course or the programme as a whole are listed below.

The board of examiners secures that graduates meet the final attainment levels of the programme (WHW 7.12 sub 2), and executes the following tasks:

1. The BoEx is accountable and responsible for the degree audit (*examen*): the test in which the BoEx determines whether the student has successfully completed all examinations in the courses of the degree programme (WHW art. 7.10 sub 2). If so, the Executive Board awards the student with the relevant BSc or MSc degree (WHW art. 7.10a sub 1) and the BoEx issues and signs the diploma and its addendum (i in **Figure 10**, WHW 7.11 sub 2 and 4).

   In addition, upon request, the BoEx issues and signs result statements (list of course grades/results before a student finishes their degree programme, WHW art. 7.11 sub 5), which is often mandated to employees of SPA (i in **Figure 10**).

   > i. Degree certificates & result statement (7,3)

2. The BoEx advises the director of education on the faculty's assessment policy and the TER (b in **Figure 10**).

   > b. Advice on policy / TER (2,3)

3. The BoEx establishes their Rules and Guidelines of the Board of Examiners (R&G) within the context of the applicable Teaching and Examination Regulations (TER, WHW art. 7.12b sub 1b and 3), based on the model R&G of the TU Delft (c in **Figure 10**).

   > c. Establish Rules & Guidelines Board of Examiners (2,3,4,5)

4. In general, the BoEx secures the quality of assessment, which is described in chapter 1, in order to secure that students achieve the learning objectives of courses, and the final attainment levels of the BSc or MSc programme. This happens on the following levels and includes the corresponding procedures:

   > d. Monitoring assessment quality (2,3,4,5)

a. The BoEx secures the quality of individual assessments (as defined in **1.2**), e.g. via periodical (quasi-)randomly selected course evaluations (WHW art. 7.12b sub 1a, d in **Figure 10**).

b. The BoEx secures the quality of Master's thesis projects and Bachelor's graduation projects (WHW art. 7.12b sub 1), typically via periodical evaluation of the quality and assessment of student graduation work (d in **Figure 10**).

c. The BoEx secures that the programme assessment plan adequately assesses all required final attainments by periodically evaluating this (WHW art. 7.12 sub 2, d in **Figure 10**).

d. The BoEx secures the quality of the organisation and procedures concerning assessments and degree audits (WHW art. 7.12b sub 1e). This is typically part of the regular checks described under point a and b, see d in **Figure 10**.

5. The BoEx appoints examiners (WHW art. 7.12c sub 1) either as generic examiners for any course in their faculty[ggg], or as an examiner in a specific course[hhh] (f in **Figure 10**).

> f. Appointing examiners (6,5,4,3)

6. The BoEx determines regulations on the composition of graduation committees to ensure assessment quality of graduation projects (**condition 24**).

> g. Composition graduation committee (6)

7. The BoEx determines additional requirements for specific assessment tasks for examiners and other assessors (**condition 23**).

> h. Additional guidelines assessors & examiners (6)

8. The BoEx deals with student requests on e.g. free degree programmes and exemption from exams (WHW art. 7.3 sub j, WHW art. 7.12b sub 1c & 1d, WHW 7.13 sub 2r & 2t, h in **Figure 10**).

> j. Student requests (7,3,4)

9. The BoEx processes examiner requests to defer from the assessment description in the TER or study guide (e in **Figure 10**, WHW 7.13 sub 2l & 2n).

> e. Examiner requests for TER exemptions (4,5)

[ggg] E.g. in the faculty CEG
[hhh] E.g. in the faculty IDE

10. The BoEx deals with student complaints on assessments (WHW art. 7.12 sub 4, i in **Figure 10**).

    > k. Student, complaints, settlements for EAB appeal cases (7,4)

11. The BoEx attempts to settle EAB appeal cases by students against course grades (WHW art. 7.61 sub 3, i in **Figure 10**). If no settlement is reached, the BoEx deals with the EAB appeal cases.

    > k. Student, complaints, settlements for EAB appeal cases (7,4)

12. The BoEx decides whether suspicions of fraud are considered fraud (WHW art. 7.12b sub 2) by doing fraud investigations, and determines fraud sanctions (j in **Figure 10**).

    > l. Decisions on suspicions of fraud & decisions on irregularities (7,4)

13. If irregularities during or in assessments have compromised the quality of an assessment, the BoEx takes appropriate action. Example: declaring all written exams invalid due to force majeure (power cuts, fire alarms, etc.) or large scale fraud (WHW 7.12b sub 1a and 1e, j in **Figure 10**).

    > l. Decisions on suspicions of fraud & decisions on irregularities (7,4)

14. The BoEx reports to the dean in an annual report based on the format in Appendix **C.2** (WHW 7.12b sub 5, a in **Figure 10**).

    > a. Annual report (1-7)

A detailed description of BoEx's tasks h-j can be found in the RACI matrix in **D.5** (**Tasks related to the boards of examiners**).

5.10 Division of assessment responsibilities between board of studies and faculty student council

The faculty student councils have the right of approval on the WHW parts that cover assessment practicalities (i.e. WHW 7.13 h-z except v), while boards of studies have the right of approval on the WHW parts that describe the content of the programme (WHW 7.13 a-g except f, including v). The next two sections include details.

5.11 Faculty student councils (tasks and responsibilities)

A faculty student council

1. has the right of approval on the following parts of the TER (see WHW 9.38.b); most of them are assessment related:
   a. number, order, and scheduling of assessments
   b. order, timeslots, and number of times that assessments and degree audits are offered on a yearly base

c.   registration procedure and registration period for assessments and degree audits

d.   assessment category per assessment: written, oral or 'other'

e.   how students with a functional limitation are facilitated in their assessments

f.   reduction of validity of course and assessment grades

g.   if oral exams are public (or not)

h.   maximum grading period

i.   procedure and time slot for student review of their assessed written assessments.

j.   procedure and time slot for students reviewing questions, assignments, and grading guides of written assessments

k.   grounds on which students can get exemption from assessments based on previously passed higher education courses or other acquired competences

l.   entry requirements for courses and assessments

m.   mandatory practical exercises

n.   monitoring of study progress and individual study guidance

o.   programme design

2.   has the right of advice on the rest of the TER (WHW 7.13, see Board of Studies **below**)

Some of the parts of the TER are the same for all programmes at the TU Delft. In these cases, the TU Delft Student Council has the right of approval and the right of advice. These parts are indicated in the model TER with red font.

5.12 Boards of studies (BoS, tasks and responsibilities)

The board of studies

1.   has the right to approve specific parts of the TER:

a.   the evaluation of education

b.   content of specialisations

c.   final attainment levels

d.   design of practical exercises

e.   ECs of the programme and per course and programme

f.   selection of students

g.   honours programme[iii]

[iii] in WHW 9.18a, these parts are listed, referring to the TER description in WHW 7.13

2. has the right to give advice on the remaining parts of the TER (see **5.11 Faculty student councils (tasks and responsibilities)**)
3. assesses the execution of the TER on a yearly basis
4. can give solicited as well as unsolicited advice on topics that are relevant for the quality of education, including the faculty's assessment policy and the programme assessment plan

Out of these responsibilities, point 1a, 1c, 1d, 2 and 4 are relevant for assessment on course or programme level.

5.13 Examiners (tasks and responsibilities)

1. Examiners are responsible for the quality of course assessment and for meeting the requirements of the TU Delft and the faculty. This includes the responsibility for the content of the assessment, the assessment method(s), and the grading process and grading of student work.
2. Examiners are responsible for a clear communication about assessments to students.
3. Examiners are responsible for providing good feedback (timely, specific and balanced[39]) to students.
4. Examiners are responsible for facilitating student review (see **Right to review (TER art. 20)**) and discussion of graded work (see **Right to discussion (TER art. 21)**).

An overview of the stakeholders in course assessment related tasks can be found in **D.3** (**Assessment responsibilities and processes in programme & course assessment design, administration, and evaluation**).

5.14 Assessor

Assessors are postdocs, researchers, PhD students, student assistants, external people, or others who assess student work and/or student performance, and provide feedback, under the responsibility and supervision of an examiner. As opposed to examiners, they have an executive function as they do **not** have a role in developing assessments.

The course examiner is responsible for ensuring that all their assessors are competent for their task (**Quality requirement 9**) by providing them with clear grading guidelines and with training, for example in calibration sessions.

5.15 Student assistants (tasks and responsibilities)

In the faculties, student assistants[iii] (SAs) can do two types of assessment-related tasks for examiners, under the supervision of the examiner:

1. Assessor tasks: SAs can suggest scores and feedback for student work. The examiner determines the grades and is responsible for the quality of the feedback, scores, and grades.

2. SAs may help examiners to set-up (digital) exams (e.g. transferring questions to the assessment tool, adjusting the test settings in the assessment tool, lay-out and first check of questions and answer model, etc.).

SAs with the second type of assessment-related tasks are required to use their employee account[kkk],[40]. The account expires after the end of their contract. The examiners are responsible for revoking the digital privileges after the end of a task. Central SAs ('support assistants') at TLS Support advise examiners on and support them with digital assessment tooling. These central SAs do not have direct access to exams, but assist lecturers based on screen sharing or screen shots.

5.16 Division of responsibilities between course examiners, examiners, assessors, lecturers and responsible lecturers

1. **Responsible lecturers** are responsible for the organisation and the content of the course in which they are 'responsible lecturer' according to the study guide.

2. **Teaching staff** includes all staff in a course, including SAs.

3. The teaching staff of each course includes one or multiple **examiners**. One of them, the **course examiner,** takes final responsibility for the creation and execution of all assessment (tasks) in the course. This includes the communication about all assessment[lll].

In many cases, the responsible lecturer is an appointed examiner and therefore also takes responsibility for the course assessment. However, if they did yet not complete their UTQ, a course examiner is added to the teaching team to take responsibility for the assessment.

[iii] By student assistants, we mean **students** who work as teaching assistants.
[kkk] In addition, some tools like Möbius also require an employee account for grading and giving feedback.
[lll] At TPM, each course has two responsible examiners. This diminishes the vulnerability to e.g. illness and staff turnover. The study guide indicates who is the first and second responsible examiner.

5.17 Support of assessment stakeholders
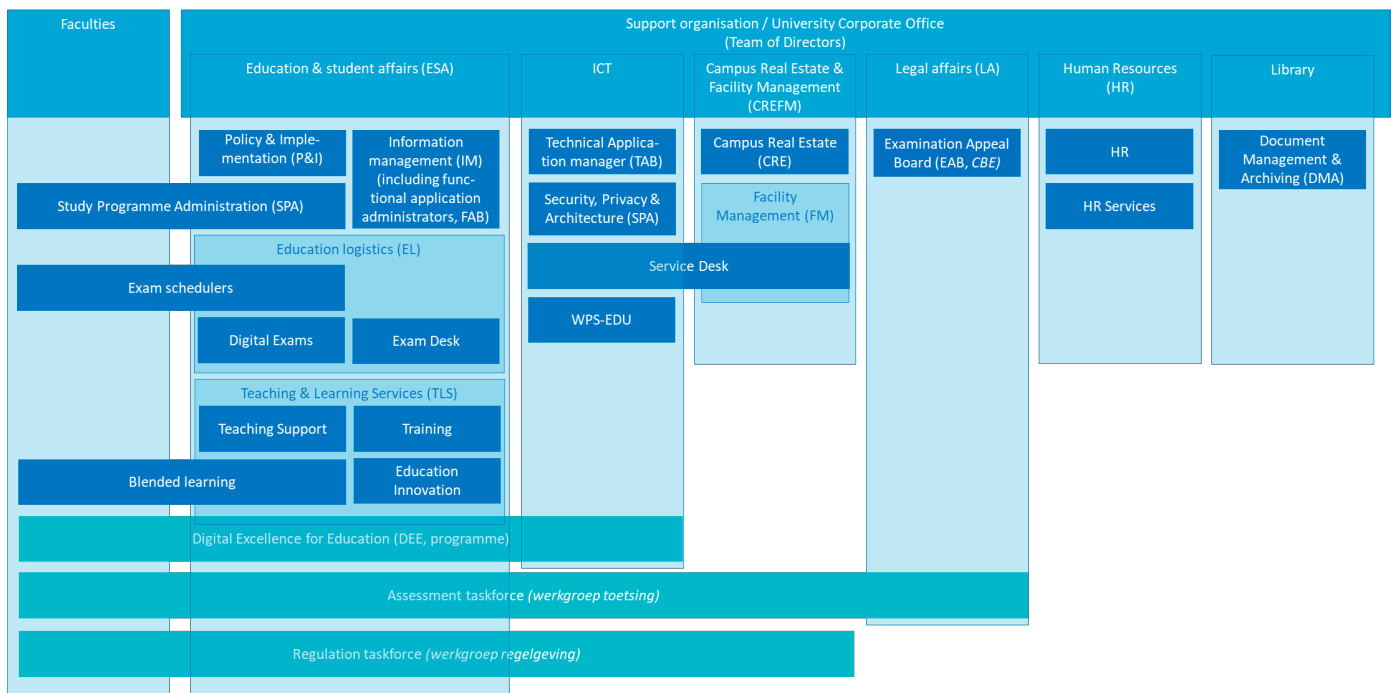
Figure 11. Organogram of the central assessment support organisation per service.
Services are Legal Affairs, Education & Student Affairs, ICT and Human Resources. Dark blue boxes are organisational units, light turquoise boxes are committees.

To realize good quality assessment and assessment organisation (**Quality requirement 8**), the Executive Board (EB) has created an extensive support programme. The different boards of the TU Delft provide a range of support (see **Figure 11**) which the sections below describe.

> **condition 18: TU Delft and the faculties support the programmes, and the courses in the process and execution of assessments.**

University Corporate Office / Education and Student Affairs (ESA)

The University Corporate Office / Education and student affairs (ESA) offers:

1. Teaching & Learning Services (TLS):
   a. teacher support desk for support questions on assessment tooling and for educational assessment advice
   b. dedicated training aimed at assessment competence for examiners (UTQ ASSESS) and members of boards of examiners (BoEx training)
   c. additional workshops on specific assessment topics
   d. online knowledge base on assessment (teaching support site), including the TU Delft assessment manual[16]

e. educational support for assessment projects in programmes and faculties.

2. an Exam Desk that processes registration for scheduled exams and the required invigilators

3. a digital exam desk (Digital Exams) that supports the preparation and administration of digital on-campus and remote scheduled exams

4. policy support for TU wide assessment policy affairs (Policy & Implementation, P&I)

5. the programme 'Horizon' which is the first line contact for students who require special adaptations to take part in assessment and education in general, due to functional disabilities, chronic disease, or other exceptional circumstances (Quality requirement 7).

6. a programme (Digital Excellence for Education, DEE) to improve the educational logistics, educational administration, and teaching and learning tools

7. administrative support (ESA-SPA) for grade registration, assessment of grade books, and production of degree certificates

8. a scheduling office that schedules exams

9. a multidisciplinary assessment taskforce (AT) that prevents and helps solving TU Delft assessment challenges by exploring and initiating solutions, and aiding communication between faculties, TU Delft central and lecturers on assessment developments

ESA and ICT

The boards of ESA and ICT together facilitate

1. a diverse assessment tooling landscape (see 1.4)
2. technical and functional application managers (TAB and FAB) for assessment related tooling

ESA and legal affairs

The boards of ESA and legal affairs together facilitate

1. the coordination and knowledge sharing between the secretaries to the boards of examiners in the taskforce regulations (*werkgroep regelgeving*)
2. the annual update of the model TER and model R&G

Legal affairs

The board of legal affairs facilitates

1. the support of the Examination Appeals Board (EAB, Dutch: *Commissie voor Beroep van de Examens, CBE*).

An overview of the tasks and stakeholders in regulations is listed in the RACI in Appendix **D.2** (**Legal framework & TU Delft wide assessment agreements**).

Human resources

The board of human resources (HR) facilitates

1. the administration in the HR system of UTQ certification (see **Administration of assessment qualifications** in **6.4**).

Campus Real Estate & Facility Management

The board of Campus Real Estate & Facility Management (CREFM) facilitates

1. building and maintenance of assessment locations

6. ASSESSMENT COMPETENCE

The TU Delft sees their lecturers as professionals in education after completing the University Teaching Qualification (UTQ). They are capable of independently running and continuously improving their course. Since assessment is an important part of education, this implies that lecturers are competent in designing the assessment of a course, and in developing, administering, scoring/feedbacking and grading assessments (see **Quality requirement 9**). This is in line with the human resource policy, which states that employees are trained for their tasks and that employees can develop themselves further within their position[41,42]. Besides lecturers, there are many more people involved in assessment. This chapter describes how the TU Delft assures that the assessment stakeholders are competent for their assessment related tasks, as stated in **Quality requirement 9**. Details can be found in Appendix **D.1** per building block of assessment (**Figure 1** and **Figure 4**).

6.1 Integration of assessment competence in HR guidelines

UTQ requirement and grounds for exemption

TU Delft requires academic staff members (UFO profiles: teacher, assistant professor, associate professor, full professor) with a task in education and an appointment of more than 0.2 FTE to have or acquire a UTQ qualification within three years after employment at TU Delft[33], or apply for UTQ exemption based on UTQ equivalency[43]. The applicable vacancies mention this. For employees in the academic career track (ACT), obtaining the UTQ is part of the assessment criteria for getting promoted to assistant professor 1 (UD1) and beyond[33]. Every employee of the TU Delft is entitled to two days per year for further development[44,45], which enables them to follow assessment specific training opportunities. Following the collective labour agreement, junior lecturers (teacher 3 and teacher 4), lecturers, postdocs, and PhDs will be provided with time to complete their teaching qualification. For lecturers, this qualification is the UTQ. A granted UTQ exemption based on established UTQ equivalence is equivalent to the UTQ, but that does result in a UTQ certificate[43].

Role of assessment in academic careers

For associate and full professors, assessment ('testing') is explicitly mentioned in the TU Delft 'guidance document on career paths with an emphasis on teaching'[46] as an example). This document also mentions Didactic Leadership Courses as training opportunity for associate and full

professors. Finally, 'testing' is a separate 'result area' [mmm] in the UNL [nnn] function description for teachers, assistant professors, and associate professors[47-49].

> **condition 19: TU Delft ensures that educational and assessment quality are explicitly mentioned in both the HR recruitment and professional development policy.**

6.2 Standard offer assessment qualifications and trainings

The TU Delft offers the following assessment trainings for teaching staff, members of educational management teams, and members of the boards of examiners. Teaching and Learning Services (TLS) organise the trainings. The TLS training offer is integrated into the Learning Hub[50] of HR.

> **condition 20: TU Delft ensures that the assessment training offer of Teaching and Learning Services (LS) is integrated in the HR training offer.**

Assessment competence in UTQ qualification (UTQ module ASSESS)

The content of UTQ module ASSESS is the heart of the assessment competence of the TU Delft and is in line with TU Delft assessment conditions and the nine requirements (see **1.2**). Being one of the four mandatory modules of the University Teaching Qualification (UTQ[ooo]), it focusses on assessment. Its learning objectives form the core competences for employees who are either responsible for course assessment, for giving assessment advice, for giving assessment training to lecturers, or for assessment quality assurance. They are in line with the 4TU UTQ competences[51]. The TU Delft assessment manual[16, ppp] and the contained guidelines form the common knowledge base on assessment within the TU Delft.

The learning objectives of UTQ ASSESS[52] are:

1) *Design an assessment plan for a course.*
2) *Analyse assessment results to improve education in a course:*
   a. *Investigate learning objective achievement.*

[mmm] A 'result area' is an HR term. It could be described as a criterion on which employees are assessed in the R&D (result & development) cycle.

[nnn] UNL: Universities of The Netherlands, *Universiteiten van Nederland (UNL)*, previously known as *VSNU* (*Vereniging van Samenwerkende Nederlandse Universiteiten).*

[ooo] The four technical universities (4TU) defined the UTQ competences. They can be found in the 4TU UTQ regulations[51].

[ppp] The TU Delft assessment manual was previously known as the UTQ ASSESS reader until December 2022. More information on projects and larger assignments, more extensive guidelines on assessment, rubrics and assessing group work can be found in the book "How to assess students through assignments"[17].

b. *Identify areas for improvement in assessment items, grade calculations, teaching, and course material.*

3) *Develop different types of assessments, including blueprints, instructions, grading guides and the grade calculation.*

4) *Evaluate the quality of assessments, based on the quality requirements for assessment.*

Senior examination qualification (SEQ)

A training 'senior examination qualification' (SEQ) is available for assessment/educational advisors, and for lecturers/educational management with an assessment task on programme level.

Handbook and training for members of the board of examiners

In addition to the handbook for boards of examiners[53], the policy department of ESA, Legal Affairs, and TLS offers (new) members of boards of examiners (BoEx) an introductory course that focusses both on their roles and responsibilities, as well as refreshes the principles of UTQ ASSESS and this assessment framework.

Graduate school trainings (for PhD students)

PhD students can follow Graduate School courses on supervision and assessment, as well as on teaching fundamentals like constructive alignment:

- T3.A1 Foundations of Educational Design[54]
- T3.A3 Assessing students and master thesis projects[55]
- T3.B1 Coaching Individual Students and Project Groups[56]

Supervision and assessment principles training (SAP) for postdoc and researchers

Other assessors and supervisors without a teaching position and therefore without UTQ obligation (e.g. postdocs, researchers and lecturers with an appointment of <=0.2 FTE) can follow the course "Supervision and Assessment Principles"[57] (SAP) that focuses on supervising and assessing individual projects.

Student assistant training

TLS offers trainings for student assistants (SAs)[58] in the faculties on how to supervise, provide feedback and assess students (i.e. basic didactics) in e.g. computer labs. In addition, a self-paced training is available for SAs who assist the examiner in developing and monitoring the technical side of digital exams, and prepares them for advising lecturers on tool use. Faculties can require their student assistants (SAs) to follow these trainings.

Training student council & faculty student council

TLS offers training for the TU Delft student council and for faculty student councils on education and assessment, to make them familiar with constructive alignment, the TU Delft assessment values, the assessment requirements, and organisation. The trainings help them to influence assessment policy in a meaningful way.

Continuing professional development

Next to the beforementioned UTQ module ASSESS, TLS offers various training opportunities to assessment stakeholders. Examples of topics of Continuing Professional Development[59] (CPD) courses, workshops, short courses, videos are:

- Using test result analysis to improve courses
- Creating (and improving) rubrics[60]
- Optimal use of assessment tools
- Fraud prevention and detection in remote assessment

> **condition 21: TU Delft offers training opportunities on assessment to staff.**

Leadership in Education Course

The TU Delft offers a Leadership in Education Course[ggg] by the Leiden-Delft-Erasmus Centre for Education and Learning[61]. Participants can decide to work on assessment-related topics as well.

6.3 Requirements by boards of examiners on competence

Requirements for examiners

> **condition 22: The boards of examiners ensure that all appointed examiners have a UTQ qualification and that other assessors work under the responsibility of an examiner.**

Boards of examiners draw up qualification requirements for the appointment of examiners in the Rules and Guidelines[22] (see **3.12**), which includes **at least a UTQ**. Other types of assessors who are not appointed as examiner can be involved in the assessment of courses/education **under supervision of the responsible examiner**.

[ggg] This course was formerly called 'Didactic Leadership Course' in the 'guidance document on career paths with emphasis on teaching in the position of Associate Professor and Full Professors'[46]

Additional requirements for examiners and assessors

> **condition 23: The boards of examiners determine prerequisites on who may carry out key assessment tasks.**

In addition to the UTQ requirement for examiners, boards of examiners can determine prerequisites for specific important assessment tasks that examiners, assessors, or other teaching staff conduct to secure their competence (**Quality requirement 9**). These tasks include assessing graduation work, assessing projects, reviewing student work as student assistants, drawing up exam questions as PhD students, etc.

Examples of additional requirements for specific tasks are:

- **UTQ status**: to have completed the UTQ or to be working on the UTQ
- **Other qualifications / training**: to have completed or attended specific task oriented training, e.g. for scientific staff without UTQ obligation (PhD students, researchers and parttime lecturers with an appointment of 0.2 FTE or less)
- **Position**: to be part of the academic teaching staff (or even hold a specific position like teacher 2) of a specific programme or track
- **Affiliation**: to be or not to be part of the department in which a student project takes place

Requirements for assessing (graduation) projects

> **condition 24: The boards of examiners have regulations on the composition of the graduation committee to ensure assessment quality of graduation projects.**

Boards of examiners can assure the quality of the assessment of graduation projects by setting requirements on the size and requirements for composition and membership of the graduation committees (see above for examples[rrr]).

6.4 Administration of assessment qualifications

The HR system keeps track of at least the TU-wide defined relevant assessment qualifications of staff. This is a condition to facilitate (digital) processes that ensure that employees with assessment tasks are qualified for their task (**Quality requirement 9**). The board of examiners can request access to the list of employees with a certain assessment qualification in order to appoint examiners, graduation committee members or other assessment related functions.

[rrr] For a concrete example, see the Rules & Guidelines of the Board of Examiners of CEG.

> **condition 25: TU Delft ensures that the HR system keeps track of at least the relevant assessment qualification of staff, listed in 6.5.**

6.5 Overview of required and desired assessment qualifications & training

Table 4 summarises the required and desired qualifications for the main assessment related functions. The 'required qualification' column indicates what qualifications the TU Delft requires per function or task. In the faculty assessment policy, the faculty decides which of these 'desired' qualifications will be made 'required' within the faculty. The rightmost column indicates who within the faculty is accountable for stimulating their employees to obtain the qualification, or to decide to make a specific qualification mandatory.

Table 4. Main required and desired assessment qualifications at TU Delft.
Overview of main required and desired qualifications (middle and right column) per main assessment function or task (left column).

Function/task	Required qualification	Desired qualification	Accountable for desired/required decision & stimulation
Examiners	UTQ		BoEx
Lecturers	UTQ (within 3 years[33])		Director of education
Track coordinators, learning line coordinators, etc.	UTQ	Senior Examination Qualification (SEQ)	Director of education, head of department
Programme director	UTQ	Leergang Onderwijskundig Leiderschap (LOL)	Dean & director of education
Director of education	UTQ	Leergang Onderwijskundig Leiderschap (LOL)	Dean
Educational advisors / assessment advisors		**Basic**: BSc or MSc in Education or UTQ **Advanced**: Assessment Expert qualification / Senior Examination Qualification	Head of ESA
Student assistants		Student Assistant Training	Director of education, BoEx
Assessors/supervisors of projects		SAP / GS courses / UTQ	BoEx
Members of the board of examiners	UTQ	Board of examiners training (within 1 year[53])	Dean

6.6 Offering information and support

This section describes what the TU Delft offers for assessment stakeholders in terms of assessment information during onboarding, the accessibility of assessment information in general, support and advice by assessment experts, and peer support within the assessment supporters' community (Focus on Assessment).

Onboarding of employees with assessment tasks

The departments ensure that they provide their new employees with assessment tasks with at least the following documents/information:

- Education related regulations
- Graduation manual
- University Teaching Qualification (in case the employee is not qualified yet)
- Overview of educational procedures and processes like exams, graduation, and (re)designing courses (including advise and approval procedures of BoS, BoEx and FSC).
- Overview of available training, events, and support on assessment
- Overview of teaching and assessment related tools (e.g. Osiris, the LMS (Brightspace) and Coursebase).
- Overview of educational management and support organisation in the faculty and within the TU Delft

> **condition 26: TU Delft and the faculties ensure that new employees receive the required information and training in order to carry out their assessment tasks.**

Accessibility of assessment information

The previously listed information for new employees should be easily accessible to <u>all</u> employees.

> **condition 27: TU Delft and the faculties make relevant assessment information available for stakeholders.**

Teaching and Learning Services provides information on teaching and related tooling via https://teaching-support.tudelft.nl/[62]. **Table 5** gives an overview of what assessment information is currently published where.

Table 5. Assessment information matrix.

Overview of where information and regulations (rows) on assessment topics (columns) are published. O = internet, X = login required (SSO)

		Website for students					Websites for employees					
		Internet (TU Delft)	Student portal (TU Delft)	Student portal (faculty)	Study guide	Brightspace	Teaching Support site	HR learning hub	TLS Training portal	GS training portal	Intranet TU Delft	Intranet faculty
Information	TU Delft assessment framework		O				O				X	
	Faculty assessment policy			O								X
	Programme assessment overview			O								X
	Course assessment				O	X						
	TU Delft assessment organization		O				O				X	
	Faculty assessment orgnanization			O								X
	Training assessment proficiency						O	X	X	X		
	Assessment proficiency requirements (faculty)											X
Regulations	Executive & Management Regulations	O										
	Model Rules & Guidelines of the Board of Examiners	O										
	Model Teaching & Education Regulations	O										
	Rules of Procedures for Examinations	O										
	Online Proctoring Regulation		O									
	Faculty Regulations			O							X	
	Rules & Guidelines of the Board of Examiners			O								
	Teaching & Education Regulations			O								
	Course information				O							

Support and advice by assessment experts

On-the-job advice and support by assessment advisors is another way of increasing assessment competence of lecturers. Both in the faculties as well as in TLS, support staff and assessment experts are available for support and advice on assessment.

> **condition 28: Assessment experts within TLS and the faculties offer support and advice on assessment.**

Assessment support peer community

The assessment support staff gathers in Focus on Assessment (FoA) meetings that focus on low-threshold peer advice and exchange of information, increasing the members' assessment competence, and escalating TU wide issues to the Assessment Taskforce (AT).

APPENDICES

APPENDIX A. OVERVIEWS

A.1 List of conditions for good assessment

Click on the conditions to go to the explanation in the framework. The conditions are listen in the order in which they appear in the text.

condition 1:   TU Delft, the faculties, the programme directors, and the examiners consciously consider the assessment values and quality requirements for assessments in their decisions about assessment.

condition 2:   TU Delft, the faculties and the programme directors ensure that all assessment building blocks are of good quality and consistent with each other. The quality of these building blocks is systematically assessed and improved at least once every six years (see quality assurance plan).

condition 3:   TU Delft ensures that the central quality assurance plan and the TU Delft assessment framework are aligned.

condition 4:   The faculties ensure that their quality assurance handbook and their assessment policy comply with each other (including the evaluation frequency), and that both documents comply with the TU Delft framework.

condition 5:   The TU Delft ensures that the available assessment tools support the goals of digital assessment tools (see 'Goal of digital assessment tools' in 1.4).

condition 6:   The TU Delft and the faculties ensure that the owners of the assessment documents mentioned in Appendix B keep these up-to-date and congruent (consistent with each other).

condition 7:   The TU Delft and the faculties ensure that students, teaching staff and other stakeholders are informed on their rights and obligations and in changes thereof (see Table 5).

condition 8:   The TU Delft and the faculties ensure that the assessments comply with the legal framework as described in Appendix B of this framework.

condition 9:	The TU Delft ensures that the assessment framework meets and operationalises the requirements of the institutional audit.
condition 10:	The faculties ensure in the faculty's assessment policy that their programmes live up to standard 3 (assessment) and 4 (achievement of the programme's final attainment levels) of the assessment framework of the NVAO.
condition 11:	TU Delft and the faculties ensure that the assessments follow the TU Delft assessment agreements, listed in chapter 3.
condition 12:	The directors of education ensure that their faculty has an up-to-date assessment policy which is in line with the TU Delft assessment framework and that operationalises the topics listed in 4.1.
condition 13:	The programme directors ensure that their programme has an up-to-date programme assessment plan that is in line with their faculties' assessment policy, and that operationalises the topics listed in 4.2.
condition 14:	The course examiners ensure that their course has an up-to-date course assessment plan that shows how the learning objectives are assessed formatively and summatively. The course assessment plans are in line with the applicable programme assessment plan and faculty assessment policy, and operationalise at least the topics listed in 4.3.
condition 15:	The programme directors ensure that their graduation projects have an up-to-date graduation manual that is in line with the programme assessment plan and with regulations. The manual contains the topics listed in 4.4.
condition 16:	TU Delft, the faculties and the boards of examiners ensure that the tasks and responsibilities of the different stakeholders with respect to assessment are clear.
condition 17:	The boards of examiners secure that graduates meet the final attainment levels of the programme by executing their legal tasks, listed in 5.9.
condition 18:	TU Delft and the faculties support the programmes, and the courses in the process and execution of assessments.

condition 19:   TU Delft ensures that educational and assessment quality are explicitly mentioned in both the HR recruitment and professional development policy.

condition 20:   TU Delft ensures that the assessment training offer of Teaching and Learning Services (LS) is integrated in the HR training offer.

condition 21:   TU Delft offers training opportunities on assessment to staff.

condition 22:   The boards of examiners ensure that all appointed examiners have a UTQ qualification and that other assessors work under the responsibility of an examiner.

condition 23:   The boards of examiners determine prerequisites on who may carry out key assessment tasks.

condition 24:   The boards of examiners have regulations on the composition of the graduation committee to ensure assessment quality of graduation projects.

condition 25:   TU Delft ensures that the HR system keeps track of at least the relevant assessment qualification of staff, listed in 6.5.

condition 26:   TU Delft and the faculties ensure that new employees receive the required information and training in order to carry out their assessment tasks.

condition 27:   TU Delft and the faculties make relevant assessment information available for stakeholders.

condition 28:   Assessment experts within TLS and the faculties offer support and advice on assessment.

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A.3 List of figures

A.4 List of tables

APPENDIX B. OVERVIEW OF FRAMEWORK PER LEVEL

B.1 National framework

Type	Name	Owner	Refresh rate / current version
Law (binding)	*Wet op het hoger onderwijs en wetenschappelijk onderzoek*[1] (WHW). (Higher Education and Research Act)	Minister of Education, Culture and Research	No standard rate / 1 January 2023
Framework (binding)	Assessment framework for the higher education accreditation system of the Netherlands[10]	NVAO	- / 2018
Regulations (binding)	4TU UTQ regulations[51]	4TU Education Management Committee	- / 18 Nov 2018

B.2 TU Delft

Type	Name	Owner	Refresh rate / current version
Strategic plan (leading)	Impact for a better society. TU Delft Strategic Framework 2018-2024[63]	Executive Board	6 years / 2018
Vision (leading)	TU Delft Vision on Education[3]	Executive Board	- / November 2017
Regulation (binding)	Executive and Management Regulations[37] *Bestuurs- en beheers reglement TU Delft (BBR)*	Executive Board	- / 2019
Model regulation (leading)	Model Teaching and Examination Regulations[2] *Model Regels en Richtlijnen van de Examencommissie (RRvE) TU Delft*	Executive Board	1 year, large update in 2023 / 2022
Model regulation (leading)	Joint model BSc / MSc Rules and Guidelines of the Board of Examiners[22] *Model Regels en Richtlijnen van de Examencommissie*	Executive Board	1 year, large update in 2023 / 2022
Regulation (binding)	Online Proctored Examination Regulations[19] *Regeling online proctored tentamen TU Delft*	Executive Board	- / November 2020
Regulation (binding)	Rules and Procedures for Examinations[18] *Reglement van Orde bij tentamens*	Executive Board	- / November 2020

Regulation (binding)	Examination Appeals Board Regulations[25] *Reglement College van beroep voor de examens TU Delft*	Examination Appeals Board	- / 20 June 2007
Regulation (binding)	Student charter[64] *Studentenstatuut*	Executive Board	1 year / 2022
Policy (leading)	TU Delft Educational Quality Assurance Plan[14] *Onderwijskwaliteitsplan TU Delft*	Executive Board	revision expected in 2023 / Fall 2009
Policy (leading)	TU Delft Assessment Framework	Executive Board	6 years / - (this document)
Policy (binding)	Binding guidelines for archiving educational data[26]	Manager Document Management & Archive	- / 1 February 2023
Policy (leading)	TU Delft strategic plan Open Science 2020-2024[65]	Executive Board	- / 2019
Format (leading)	Model Faculty Regulations[38] *Model faculteitsreglement*	Executive Board	- / July 2017
Format (leading)	Format annual report board of examiners (Appendix C.2)	Executive Board	Part of this Assessment Framework (see Appendix C.2)
Manual	Handbook boards of examiners[53] *handbook examencommissies*	Executive Board / ESA-P&I & Taskforce Regulations	- / 2022

B.3 Faculty

Type	Name	Owner	Refresh rate
Regulation	Faculty Regulations *Faculteitsregelement*	Dean	-
Regulation	Rules and Guidelines of the Board of Examiners *Regels en Richtlijnen van de Examencommissie (RRvE)*	Board of examiners	1 year
Regulation	Teaching and Examination Regulations *Onderwijs- en Examenregeling (OER)*	Director of education / dean	1 year
Policy	Faculty assessment policy	Director of education	6 years
Policy/handbook	Faculty quality assurance handbook	Dean	-
Policy/ procedure	Policy on and/or procedure for UTQ Exemption	Director of education / Dean	-
Annual report	Annual report of the board of examiners (to the dean)	Board of examiners	1 year

Annual report	Annual educational report of the Faculty [sss] (to the Executive Board)	Director of education / dean	1 year

B.4 Programme

Type	Name	Owner	Refresh rate
Regulation	Annex to the Teaching and Examination Regulations	Programme director	1 year

B.5 Course

Type	Name	Owner	Refresh rate
Course information	Study guide	Responsible lecturer	1 year, 1 July
Course information	Learning Management System (LMS, Brightspace)	Responsible lecturer	1 year, updated during course

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[sss] Mentioned in model Faculty Regulations art. 7.8 sub 1 and art. 9.3 sub e

APPENDIX C. ASSESSMENT FORMATS

C.1 Faculty assessment formats

This appendix gives an overview of the most common formats that faculties and programmes use to be in control of the consistency of the assessment on programme, course, and assessment level. The faculty's assessment experts and educational advisors have access to formats. In addition, the Teaching Support pages offers examples of these formats.

- Formats for programme assessment plans (see **4.2**), including:
    - Format LO-Final Attainment Levels overview on programme level
    - Format to demonstrate the spread in deadlines and assessments
- Formats for the course assessment plans (see **4.3**), including:
    - Format LO-Final Attainment Levels overview on course level
    - Format for assessment matrices on course level (for indicating the assessment method per LO)
    - Format for consistency check tables (for courses that consist of a project)
- Formats for individual assessments
    - Format for the cover page for exams[ttt]
    - Format for exams
    - Format for assessment matrices on assessment level
    - Format for rubrics
    - Format for assessment forms
    - Format for consistency check tables (for projects/assignments etc.)
    - Format for an assignment/project description that includes minimum information for assignments and projects.

C.2 Format annual report of boards of examiners

The boards of examiners use the format below[uuu] for their annual reports to demonstrate that the board secures the assessment quality of the programme(s), and to extract and compare

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[ttt] A checklist with required content of the cover page can be found in the TU Delft assessment manual[16].
[uuu] The format was improved by the Taskforce Regulations (*werkgroep regelgeving*) and P&I, after which the chairs of the boards of examiners were consulted in their meeting in May 2023.

information between faculties. This enables the TU Delft to detect trends and act upon them. The format provides boards of examiners with some flexibility for their own context.

Format of the annual report of the board of examiners

1. Introduction

2. General information on the functioning of the Board of Examination

   2.1. Composition of the Board of Examiners and, if applicable, of the sub-Boards of Examiners
   Including schedule of admission (terms of office) and the professionalisation, e.g. UTQ or BoE-training, per member. For example:

Name member	Role	Board	Term	Length	UTQ	BoE-training

   2.2. Meetings
   List of meeting dates / or number of meetings

   2.3. Information on committees (if applicable), including composition and number of meetings
   Example: course assessment committee, graduation work committee

   2.4. Mandates
   Complete list of mandates, or reference to mandate scheme, for e.g.:

   - *signing degrees*

   - *signing course grade statements*

   - *approving individual exam programmes*

   - *approving composition of graduation assessment committees*

- *decisions on allowing specific special facilities during exams by the academic councillor in specific cases (if applicable, this needs to be specified)*

- *writing & signing letters on decisions that were discussed in the BoE meeting*

- *etc.*

2.5. Appointment of examiners
Procedure(s) (or reference to procedure(s)) for the appointment, numbers of appointed examiners, number of exemptions on requirements, encountered issues, etc..

2.6. Approvement of composition of graduation assessment committees
Procedure(s) (or reference to procedure(s)) for the approvement of graduation assessment committees

2.7. Analysis of trends and consequences for policy / regulations
Include recommendations, if necessary.

3. Quality of degrees

3.1. Numbers of degrees, preferably plotted over time.

3.1.1. *Propedeuse* degrees (if applicable, including the number of *cum laude*)

3.1.2. Bachelor degrees (including the number of *cum laude*)

3.1.3. Honours' programme bachelor

3.1.4. Master degrees (including the number of *cum laude*) per track, plus free programme

3.1.5. Endorsements (if still applicable)

3.1.6. Honours' programme master

3.2. Analysis of trends and consequences for policy / regulations

(e.g. cum laude *policy) Include recommendations, if necessary.*

4. Quality of assessment programme

4.1. Structural activities of the BoE to ensure the quality of the assessment programme
Yearly analysis of each assessment programme, request for this overview, etc.

4.2. Analysis of trends and consequences for policy / regulations
Include recommendations, if necessary.

5. Quality of graduation projects

   5.1. Structural activities of the BoE to ensure quality of graduation projects

   5.2. Analysis of trends and consequences for policy / regulations
   Include recommendations, if necessary.

6. Quality of assessment in courses

   6.1. Structural activities of the BoE to ensure quality of the assessment in courses

   6.2. Analysis of trends and consequences for policy / regulations
   Include recommendations, if necessary.

7. Fraud

   7.1. Prevention, policy

   7.2. Numbers per type of fraud (plagiarism, other)

   7.3. Analysis of trends and consequences for policy / regulations
   Include recommendations, if necessary.

8. Individual requests

   8.1. Numbers
   This includes numbers per:

      8.1.1. Changes to the examination programme:

         8.1.1.1. Exemptions

         8.1.1.2. Free minors

      8.1.2. Requests for special facilities during examinations or for other assessment types
      Due to disabilities, chronic disease, special individual circumstances, or not being able to be physically present in the examination place.

      8.1.3. Electives

      8.1.4. Courses abroad

      8.1.5. Requests by lecturers to change the assessment compared to the study guide description (during the academic year)

  8.2. Analysis of trends and consequences for policy / regulations
Include recommendations, if necessary.

9. Appeal cases

  9.1. Numbers per types

  9.2. Analysis and consequences for policy / regulations
Include recommendations, if necessary.

10. Regulations

  10.1.   Rules & Guidelines of the Board of Examination (establishment)
Date of establishment of the Rules & Guidelines, list of changes compared to last year, including brief explanation

  10.2.   Teaching and Examination Regulations and their addenda (advice)
List of advice on the TER and whether or not these advices have been processed.

11. Assessment policy

  11.1.   Advice on the faculty's (or programme's) assessment policy

  11.2.   Contribution/advice to specific assessment policy topics
List of points to which the Board contributed or on which the Board wrote an advice, to whom it was given, and a description of the advice

12. Reflection on previous year and plans for next year

  12.1.   Reflection on and list of plans of previous year
List points of attention

  12.2.   Next year: Plans of the Board of Examiners
An outline of points of attention

  12.3.   Next year: Recommendations and requests to the Dean

  12.4.   Conclusion

APPENDIX D. ASSESSMENT RESPONSIBILITIES (RACI)

In this appendix, so called RACI matrices (a responsibility assignment matrix) describe the assessment responsibilities. These matrices indicate per task who is accountable (finally responsible) for this task (indicated by 'A'), who is responsible (R) for conducting task for the accountable person, who <u>needs</u> to be consulted on this task (C), and who should be informed of the outcome (I). If a letter is between brackets (), this means that this person is only responsible, consulted, or informed, in situations that require this (as opposed to always). Hence 'R' means that this person carries out a task related to the activity, not that they are responsible, since this is indicated by an 'A'.

The right column indicates what the sources are of the accountability and of the consultancy requirements (if available). The responsible (R) and informed (I) people are based on current (or desired) processes. NB. 'consulted' can imply both that this body needs to give consent, or that they need to be consulted.

D.1 Global assessment responsibilities

Table 6. Global TU Delft assessment responsibilities RACI matrix

Legend: A = accountable, R = carries out a task (responsible), C = consulted, I = informed. () = only if required.

Category	Role	1. TU Delft assessment framework	2. Faculty assessment policy	3. Programme assessment	4. Course assessment & 5. assessment	6a. Assessment proficiency training	6b. Assessment proficiency of examiners faculty	7a. Assessment organization TU	7b. Assessment organisation faculty	8a. TU Delft legal framework	8b. Faculty legal framework
Management	**Executive Board**	A								A	
	Director ESA	C						A			
	Manager Education Service Centre	C						R			
	Manager Education Logistics	C						R		C	
	Manager Study Programme Administration	C						R		C	
	Manager Academic Services	C				A		R			
	Manager TLS	C				R	R	R		C	
	Legal Affairs	C	(C)			(C)				R	C
	HR	C				R					
	Dean	I	C			I			A	I	A
	Directors of eduction	C	AR	C		C	A		R	(C)	R
	Programme directors	C	C	AR		I	CR				R
	Heads of Education & Student Affairs	C	C	C		(C)	C	C	R	(C)	(C)
	Department heads	I	C	C		I	R		R		
Teaching staff	Responsible lecturer		I	C	C	I			I	I	I
	Examiner	I	I	I	A	I	I/R	I	I	I	I
	Teaching team		I	I	R	I			I	I	I
	Teaching assistant				(R)	I			I	(I)	(I)
	Invigilator				(R)	I		I	I	(I)	(I)
Participation	Central Student Council	C				I	(I)	C		C	
	Central Work Council	I				I	(C)			(C)	
	Taskforce Assessment	C				C		C		C	
	Chairs of Boards of Examiners	I				C		C		(C)	
	Werkgroep Regelgeving	C				I		C		C/R	
	Focus on Assessment	C				I		I		(C)	
	Educational Quality Assurance Officers meeting (*OKZ*)	C						I		(C)	
	Boards of Studies	C	C	C	C		I				C
	Boards of Examiners	C	C	C	C	I	R		C		C
	Faculty Work Council		(C)						C		(C)
	Faculty Student Council	C	C				(C)		C		C
Central support	Process manager assessment (ESA/AS/TLS)	C	I	I		C		R	I(C)	C	I
	Schedule support (ESA/ESC/EL, *roosteraars*)	I	I	C	R			R	R	(C)	
	Study Programme Administration (ESA/ESC/SPA)	C	C	C		(C)		R	R	(C)	(C)
	Functional Administrator Exam Tools (ESA/IM)	C				(C)					
	Exam Logistics (ESA/ESC/EL, Digital Exams & Exam Desk)	C	I	I	R	(C)		R	R	(C)	
	Workspace Services - Education (ICT/SSC/WPS/EDU)	I	I	I	(R)	(C)		(R)	(R)		
	Central Teaching Support (ESA/AS/TLS)	C	I		(C)	I		I(C)		I	
	Learning developers, advisors (ESA/AS/TLS)	C	(C)	(C)	(C)	I		I(C)		I	
	UTQ and CPD trainers (ESA/AS/TLS)	C	I			R		I(C)		I	
	Student councellors (ESA/AS/SD, Horizon)	C	I			(C)		R	(C)	(C)	
	TU Delft policy & implementation (ESA/P&I)	C/R	C			(C)		I		R	(C)I
	Document Management & Archiving (Library/DMA)	C	(C)			(C)		(C)	(C)	(C)	(C)
	Teaching Support (ESA/AS/TLS)	C	I		(C)	I		I(C)		I	
	Learning developers, advisors (ESA/AS/TLS)	C	(C)	(C)	(C)	I		I(C)		I	
	UTQ and CPD trainers (ESA/AS/TLS)	C	I			R		I(C)		I	
Faculty support	Educational advisor on assessment	C	R	R	(C)	I		I	(C)	I	(C)
	Educational advisor		C	C		I		I	I	I	I
	Quality assurance officer		C	C		I					(C)
	Secretary BoE	I(C)	C	I	(C)	I		I	(C)	I	R
	Faculty's department secretaries				(R)			R	R		
	Academic councelor	I	I	I	I			I	I	I	I
	HR faculty		I			R	(C)R				
Student	Student	I	I	I	I			I	I	I	I

D.2 Legal framework & TU Delft wide assessment agreements

Table 7. TU Delft responsibilities for the legal framework for assessment in a RACI matrix.

Legend: A = accountable, R = carries out a task (responsible), C = consulted, I = informed. () = only if required.

Document	TUD Central												Faculty									
	Executive Board	ESA policy	Legal Affairs	Process manager assessment	Directors of Education (ODO)	Heads of ESA (HOS)	Chairs BoE (voorzittersoverleg)	University Student Council	Taskforce Regulations	Taskforce Assessment	Focus on Assessment	Quality Assurance Meeting	Dean	Director of Education	Head of ESA	Programme director / Board of Education	Board of Examiners	Board of Studies	Faculty Student Council	Faculty Work Council	Examiner	Student
Model TER	A	R	R	C				C	C	(C)			I		C			C	I			
Model Rules & Guidelines BoE	A	R	R	C			C	C	C	(C)			I				C					
Rules of Procedure for Examinations	A	R	R	R			C		C	(C)												
Assessment framework	A	R	C	C	I	I	I	C	C	(C)	C	C	C	C	I	I	C	I	I		I	I
Faculty assessment policy	I	C		I								I	A	R	C	C	C	C	C	I	I	
Programme assessment plan													A	C	C	R	C	C	I		I	I
TER			C										A	I	R	R	C	C	C		I	I
Study guide (course description)													A	I	I	R	I	C	C		R	I
Rules & Guidelines Board of Examiners	I		C	I									C	C	I	I	A/R	I	I		I	I

D.3 Assessment responsibilities and processes in programme & course assessment design, administration, and evaluation

Table 8. TU Delft responsibilities for the education and assessment process in a RACI matrix.

Legend: A = accountable, R = carries out a task (responsible), C = consulted, I = informed. () = only if required.

	Product / process	Executive Board	Examination Appeals Board	Dean	Director of Education	Faculty head of ESA	Quality assurance officer	Programme director / Board of Education	Board of Examiners	Board of Studies	Faculty Student Council	Faculty Work Council	Examiner	Assessors	Student
		Central		**Faculty**											
Programme	Intended Learning Outcomes of the programme	I		A	C			R	C	C	C		I		I
	Programme assessment plan				C	I		A/R	C	C	C		I		I
Develop & administer assessment	Learning objectives course							A	C	C	C		R		I
	Develop/improve assessment plan course				I			C	C	C	C		A/R		I
	Develop/improve assessment matrix or consistency check table								I				A/R		I
	Develop/improve answer model/rubric								I				A/R		I
	Make available example exam or assessment criteria								I				A/R		I
	Administer exam								I				A/R		R
	Collect student work								I				A/R		R
Score, grade, feedback, communicate, handle objections	Score student work								I				A/R		I
	Test result analysis								I				A/(R)		
	Score-grade transformation / cut-off score determination								I				A/R		I
	Communicate grades & feedback								I				A/R		I
	Register grades				I			I	I				A/R		I
	Enable inspection of student work												A/R		R
	Enable discussion of student results												A/R		R
	Handle objections to course results		A/R						R				R		R
	Declare assessments invalid								A/R				C		I
	Evaluation of course & assessment, improvement plans for next year							I	I				A/R		C
Evaluation	System of periodic course evaluation	I		C	A	C	RC	C	C	I	C	C	I		I
	Periodic course evaluation				A		R	I/R	I	I/C			C/I		C
	Quality assurance of assessment			(R)				I/R	A(R)						
Graduation	Graduation manual								A/R	C			I	I	I
	Grading rubric/grading scheme/assessment form								A/R	C			I	I	I
	Process grades												AR	R	

D.4 Central & faculty organisation of scheduled exams

Table 9. TU Delft assessment responsibilities for scheduled exams in a RACI matrix.

Legend: A = accountable, R = carries out a task (responsible), C = consulted, I = informed. () = only if required.

Phase	Document	ESA central	Exam Scheduler	Exam Desk	FlexDelft	Digital Exams	FAB	Horizon	Invigilator	Online proctor	Faculty Manager ESA	Programme director / Board of Education	Board of Examiners	Academic Counselor	Examiner	Student
Before exam	Schedule exam	A	R	I		I			I		I	C			R/C	I
Before exam	Register for exam			A/R					I						I	R
Before exam	Apply for standard facilities for functional limitation							A/R								R
Before exam	Apply for special facilities for functional limitation												A/R	C	C	R,C
Handwritten exams	Arrange invigilators			R	R				C						A/R	
Handwritten exams	Accomodate students with funtional limitations														A/R	R
Handwritten exams	Print exam booklets														A/R	
Handwritten exams	Exam paper & scrap paper			R					R						A/R	
Handwritten exams	Identification of students								R						A/R	R
Handwritten exams	Invigilation								R						A/R	
Digital exams	Arrange e-invigilators & invigilators			R	R				C						A/R	
Digital exams	Accomodate students with funtional limitations					R									A/R	R
Digital exams	Enter questions & testing settings					C									A/R	
Digital exams	Exam settings					A/R	C								R/C	
Digital exams	Exam paper & scrap paper						R		R						A/R	
Digital exams	Identification of students								R						A/R	
Digital exams	Invigilation								R						A/R	
Remote exams	Online proctoring if required					A/R	C			R		C			C	
Remote exams	Accomodate students with funtional limitations					R									A/R	
Remote exams	Enter questions & testing settings					C									A/R	
Remote exams	Exam settings					A/R	C								R	
Remote exams	Fraud prevention & detection									R					A/R	

D.5 Tasks related to the boards of examiners

Table 10. TU Delft responsibilities for boards of examiners in a RACI matrix, divided into general, degrees and exemptions, and fraud related processes.

Legend: A = accountable, R = responsible, C = consulted, I = informed, () = only if required

Group	Process	Executive Board	ESA central	Exam Desk	Digital Exams	Invigilator	Online proctor	Horizon / student counsellor	Examination Appeals Board	Dean	Director of Education	Faculty Manager ESA	Programme director / Board of Education	Board of Examiners	Board of Studies	Faculty Student Council	Faculty Work Council	Faculty assessment advisor	Academic Counsellor	Examiner	Student
		TUD Central								**Faculty**											
General	Appointment Board of Examiners									A/R	I	I	I	C	I	I				I	I
General	Appointment of examiners									I		I	I	A/R						I	
General	Annual report Board of Examiners	I								C	I	I	I	A/R	I	I				I	I
Examinations, degree programmes & degrees	Exemptions										I	I	A/R						R	C	R/I
Examinations, degree programmes & degrees	Standard assessment support facilities					R								A/R					C		R/I
Examinations, degree programmes & degrees	Customised assessment adjustments													A/R	(C)			(C)	C	C	R/I
Examinations, degree programmes & degrees	Process objections to decisions								A/R					R						(C)	R/I
Examinations, degree programmes & degrees	Degrees										R		I	A/R							R/I
Examinations, degree programmes & degrees	Double degrees												I	A/R							R/I
Examinations, degree programmes & degrees	Student requests																				
Fraud prevention, detection and procedures	Fraud prevention	R	R	R	R	I			I		C	R	A/R	R						R	R
Fraud prevention, detection and procedures	Detect & report suspicions of fraud					R	R							I						A/R	C/I
Fraud prevention, detection and procedures	Process suspicions of fraud					(C)				I				A/R						C/I	C/I
Irregularities during exam	Report irregularities during an assessment					R	R							I						A/R	I
Irregularities during exam	Process reported irregularities during an assessment					(C)								A/R						C/I	(C)/I

APPENDIX E. ORGANISATIONAL DIFFERENCES BETWEEN FACULTIES

This appendix gives an overview of the main organisational differences between faculties that are relevant for assessment.

E.1 Programme director

Depending on the faculty, 'programme director' can be called 'director of studies' in some faculties (e.g. AE, AS, EEMCS, CEG). See the assessment policy of the faculty for the actual organisation.

E.2 Educational management team instead of programme director

In addition, at IDE, AE and 3mE, an 'educational management team' (EMT, names may vary) is accountable for *all* programmes, instead of each individual programme director for their own programme. These EMTs consists of the following people (see the Faculty Regulations and WHW):

- IDE: Director of Education, all programme directors, head of ESA, student. This is called the 'Board of Education' (BoE, *opleidingsdirectie*).

- AE: both programme directors (one of them is also Director of Education), student (EMT, *opleidingsbestuur*)

- 3mE: Director of Education, programme directors, head of ESA, student

Other faculties may also have EMT's, but they do not have the same power as the EMTs that are mentioned above.

E.3 Shared responsibility to negotiate with department head on teaching staff

Usually, it is the programme director who negotiates with the department heads on teaching staff. However, according to their Faculty Regulations, at IDE, EEMCS and 3mE, this responsibility is divided as follows:

1) IDE: the Director of Education has this responsibility
2) EEMCS: the educational management (Director of Education, programme directors, and the Director of Interfaculty Education) share this responsibility
3) 3mE: shared responsibility of the programme directors and Director of Education

E.4 Subboards of Examiners

Most faculties have a single board of examiners that are responsible for all programmes. At AE, AS and EEMCS, there are subboards of examiners per programme, in addition to the central board of examiners. In these faculties, the subboards of examiners appoint examiners, instead of the board of examiners.

E.5 Abbreviation for the Rules and Guidelines of the Boards of Examiners

- 3mE: RGBE
- ABE: RGbE
- AE: RRvE
- AS: R&R
- CEG: R&G
- EEMCS: RRoBE
- TPM: RGBoE
- IDE: RGofBE

E.6 Student assistants

In some faculties like TPM, ESA hires and trains student assistants (SAs) centrally to support lecturers in e.g. creating digital assessment. In other faculties like CEG, it is the department of the responsible lecturer of the course that hires SAs. Since TLS provides SA training per faculty, CEG's ESA arranges the SA training.

F.1 Glossary

Term	Description
adaptive assessment	Test that adapts the degree of difficulty and/or subject to the students' individual abilities while the test is being taken.
adaptive question	Within a question, the next subquestion depends on the correctness of the answer to the previous subquestion. The lecturer can set the assessment tool to show the exact same subquestion for a limited number of times until the student gives the correct answer, or reaches the maximum number of tries, in which case the tool shows the student the correct answer, which the student can use in the next subquestion.
anonymous scoring	Assessors score student work without access to the student's identity.
answer key	Correct answer to a closed-ended question. This can also be an equation, or a numerical answer, depending on the question type.
answer model	Combination of model answer plus scoring guide: indicates per partially correct answer and per part of a correct answer how many points will be awarded and indicates how many points will be subtracted for specific errors. Example for mcq: A: 1 point, B: ½ point, C: 0 points, D: 0 points. Example for open question: calculation step 1: +2 points, calculation step 2: +3 points, step 3: +1 point, no units: -1 point.
archiving	securely storing data until reaching the retention period. Securely implies restricting access, making the data findable, and ensuring that the data cannot be changed,
archived securely	Data and metadata are stored safely and is preferably no longer changeable so that later it is certain that this is the original version.
assessment	Educational activities during which individual students demonstrate how well they master the *learning objectives* of a course, and during which their performance is measured. This information is shared with students to steer and/or evaluate their learning. Examples: projects, exams.

assessment activity   Activity that a student does during an assessment. In constructively aligned courses, this matches the learning objectives.

assessment agreement

Part of the programme assessment plan that consists of agreements for all assessments in that specific <u>programme</u>.

assessment competence

To what extent an employee of the TU Delft who participates in an assessment process is able to perform their assessment tasks in such a way that it leads to good quality assessment.

assessment criteria   Aspects of a product or process on which a student are assessed on, for example during a project.

assessment matrix   Blueprint of an assessment for an exam: A matrix that indicates for all individual subquestions and their maximum scores what learning objective (rows) they assess on which level of the used taxonomy (columns).

assessment method   Examples: written exam, oral exam, project, report, presentation, etc.

assessment mode   Whether the assessment is administered under physical supervision of an examiner and/or invigilator (i.e., in an exam hall/room), whether the assessment is administered via the internet (i.e., remote), or whether the assessment is hybrid (a combination of on-campus and online).

course assessment plan

Overview of the assessments <u>in a course</u>. Its goal is to demonstrate how the learning objectives of a course are assessed in a valid, reliable, transparent way that stimulates learning. It includes the main characteristics of the course like contribution to final grade (0% - 100%), regulations for retake / addition, feedback on the assessment, what learning objectives are assessed per assessment, approximate week planning of deadlines and assessments, allowed use tools & information during the assessment, assessment tooling, how the final grade represents the performance of an individual student and how the learning objectives contribute to the programme's intended learning outcomes.

programme assessment plan

Overview of the assessment in a programme. Its goal is to demonstrate how the final attainment levels (FALs) of the programme are assessed in the combination of the programme's courses in a valid way. It includes an overview of what courses contribute to what FALs and what assessment forms are used to assess these.

assessment tool

Digital tool (e.g. software, online tool) in which parts of the assessment cycle are conducted or supported. Examples: designing assessments, administering assessments, doing exams as a student, proctoring/invigilating, handing in student work, scoring student work, providing feedback, test result analysis, grade calculating, grade communication, students reviewing and discussing graded work and grades, grade administration, evaluating assessment, plagiarism check, online proctoring, etc.

assessor

Person who scores or gives feedback to student work or student performance.

author

Someone who composes the test and who compiles/develops (sub)questions, either individually or in collaboration with other authors.

binding recommendation on the continuation of studies (BSA)

Binding advice to individual students on the continuation of whether they can continue their studies. Given at the end of the first year of the Bachelor. Dutch: *Bindend studieadvies (BSA).*

Bloom level

One of the following 6 levels in the adapted cognitive taxonomy of Bloom: understand, apply, analyse, evaluate, create (adapted cognitive taxonomy). See here[34].

blueprint

Schematic representation of an assessment in a matrix. For exams, this is an assessment matrix; for projects/assignments/etc. a consistency check table is more common.

Etymology: a blueprint of a building was a white-on-blue technical drawing of e.g. a building in the early 20th century.

bring-your-own-device assessment

Assessment in an exam room during which students perform the digital exam on their own laptop. Typically requires extra security measures. BYOD

calibration session Session during which assessors who grade the same assignment proof-grade (example) student work and discuss differences in scores and feedback to improve the quality and consistency of their grading and feedback.

closed-ended question Question to which the answer is given by selecting one or multiple items from a limited number of options. Examples: multiple choice, multiple select, matching, selecting a number from a limited range, selecting part of a picture, etc. Closed-ended questions could lead to a correct answer without prior knowledge by randomly choosing an answer option, which implies the need for *guessing correction*.

combination test Test that is composed of two separate tests with a separate score. An example being one part of a test with closed questions and another part with open questions.

consistency check table

Overview of a project (or large assignment) which indicates per learning objective (rows) which related criteria (content of the cells) are assessed formatively and summatively per (intermediate or final) deliverable(s) or process(es) (columns).

constructive alignment Design principle for courses and programmes to stimulates student learning. In constructively aligned courses, learning objectives, learning activities and assessment activities are aligned. In constructively aligned programmes, final attainments, learning objectives and assessment types are aligned.

course Coherent unit of study within a programme that includes learning activities and formative assessments to help students master the learning objectives, and summative assessment(s) of which the results express how well individual students have succeeded in this. After passing the summative assessment, students receive the ECs that correspond to the

course. Some courses consist fully or partially of a project.

Other term used in some programmes: module.

course coordinator	The lecturer who is responsible for the course as a whole. Terminology used in study guide: 'responsible lecturer'.
course grade	The final grade of a course. Synonym: *final grade*.
cover page	Front page of a paper exam that the student reads and that contains general information and general instructions.
criterion	Aspect on which students' deliverables or the process of creating them will be graded.
cut-off score	Score, that a student needs for a grade of 6.0 (minimum pass score). Dutch: *cesuur*
degree audit	the test in which the BoEx determines whether the student as successfully completed all examinations in the courses of the degree programme (WHW art. 7.10). If so, the EB awards the student with the relevant BSc or MSc degree (WHW art. 7.10a sub 1). Dutch: *examen* (not to be confused with exam=*tentamen*).
degree program	List of courses that the board of examiners approved and that an individual student needs to complete in order to obtain the desired degree. There are standard degree programmes, and individual / free degree programmes, which the board of examiners explicitly has to approve.
descriptor	Description of how students' deliverables or the process of creating them looks like at a specific level for a specific criterion in a rubric. See rubric.
device	Device on which a student takes the test (terms used in other places: computer, workstation).
digital exam	Written exam input type during which students answer exam questions with the help of a computer.
Digital Exams	TU Delft service that supports lecturers in the process of scheduled digital on-campus and remote written exams.

drawing tool	Tool within an assessment tool that allows to draw a picture, graph, or diagram. Some drawing tools may allow for automatic grading of student input in the tool.
educational period	Period during which courses run. The basic educational periods are four quarters (Q1 to Q4) and a summer period for retakes (Q5). See https://www.tudelft.nl/en/student/education/academic-calendar.
e-invigilator	Invigilator for a digital exam who helps examiners and students with administrative and technical issues. Examples: add unregistered students to the exam, help students to continue on another computer and provide compensatory time in case of computer issues.
EvaSys	System that administers questionnaires for course evaluations to students, and processes the outcome of these evaluations into reports.
exam	Scheduled summative written test that students take during a specific exam timeslot on a specific day. Examples: written exam, oral exam. NB1: in the TER and R&G, all types of summative assessments are called 'examinations' (*tentamens*), including assignments and projects. NB2: 'exam' should not be confused with the Dutch word '*examen*', which is 'degree audit' (see 'degree audit').
exam timeslot	Timeslot during which students can take the test.
exam period	Period during which most exams take place. Every educational period has an exam period in week x.9 and x.10 (or only x.10, x being the number of the quarter, see 'educational period'), and some programmes have an exam period for midterms around week x.5. See https://www.tudelft.nl/en/student/education/academic-calendar. Few tests take place outside these periods.
examination	Formal word for 'assessment'. Can refer to any type of assessment.
Examination Appeals Board (EAB)	TU Delft appeals board that processes and decides on appeal cases by students on assessment (see WHW art. 7.61, sub 1). This includes course grades given by examiners (students cannot appeal against partial grades until the final course grade has been communicated) and decisions of the

board of examiners. The BoEx can make decisions on e.g. complaints by individual or groups of students on an assessment, or on requests for an extra assessment opportunity. The working method of the EAB is described in the Examination Appeals Board Regulations. Dutch: *College van Beroep voor de Examens, CBE*.

examiner	Member of the teaching staff who is appointed examiner by the board of examiners and who is responsible (alone or with colleagues) for the content and process of the examination of a course, including the responsibility for grading the tests.
feedback	Structured information for students on their performance and possibilities for improvement, based on the quality of a student product or process. Feedback is structured per assessment criterion and/or learning objective and used in a follow-up learning activity or assessment. Feedback can be given by peers, teaching staff or by the student themself (via self-assessment).
final attainment (level)	List of achievements of graduates that describe what graduates of a programme are able to do after successfully completing the programme. Synonym 1 (used during accreditations): intended learning outcome / ILO. Synonym 2: exit qualification Abbreviation: FAL. See: intended learning outcome. Abbreviation: ILO.
final grade	The final grade of a course. Synonym: *course grade.*
formative assessment	Assessment that does not influence the grade of a course and is meant to give students feedback on how well they currently master the learning objectives and what steps they still need to take to improve before the summative assessment at end of the course. Formative assessment counts as such 1) if the assessment is at the level of the learning objectives, 2) if the performance of students during the activity does not count for the course grade or passing the course and if the activity is voluntary, 3) if students receive structured feedback on the assessment criteria or learning objectives, and 4) if students are able and stimulated to

use the feedback in consecutive learning activities and summative assessment.

fraud	'any act or omission by a student that makes it fully or partially impossible to properly assess the knowledge, insight and skill of that student or another student'[22]
free riding	a form of fraud in group work where one student of the group is not contributing on terms of time investment or output. Synonym: 'piggy backing'
functional application manager	
	A functional application manager is responsible within an organisation for the optimal functioning of one or more information systems. Not only do they ensure the continuity of the systems, but they also fulfil a supporting role regarding the users. In that sense, functional management forms the connection between ICT and business operations.
graduation	MSc or BSc graduation.
guessing correction	Taking into account the probability that students correctly guess the answer to *closed-ended questions* in the grade calculation. This is typically done by subtracting the *guessing score* from individual scores and maximum score before the *score-grade transformation*.
guessing score	Average score by randomly guessing the answer to closed-ended questions.
GDPR	General Data Protection Regulation, see https://eur-lex.europa.eu/eli/reg/2016/679/oj.
GPA	Grade point average: Weighted average of all numerical grades of an individual student in a programme, rounded to two decimals, excluding results from Honours Programme courses.
grade	Description of student performance on a test, which is based on the score using a score-grade conversion (synonyms: mark (Australia, US)).
hybrid assessment	Test that consists of a digital part (via a device) and a paper-based, handwritten part.

inspection	Possibility for students to inspect/review their graded work and discuss objections to the score with the examiner. Also: student inspection.
institutional audit	"An institutional audit is a periodic, external, and independent assessment of the internal quality assurance in place at an institution. Internal quality assurance comprises both the quality culture and the internal quality assurance system of an institution. The audit serves to verify that the institution's internal quality assurance system, in interconnection with its quality culture, safeguards the realisation of its individual vision of good education."page 6 in [10]
intended learning outcome	
	See final attainment level (FAL). Abbreviation: ILO.
invigilator	Someone who supervises the exam for the detection of irregularities and fraudulent behaviour on campus.
knock-out criterion	A criterion that has a minimum level that needs to be met in order for the student to receive feedback and/or a grade.
learning activities	Activities that a student performs during a course in order to train the learning objectives.
learning objectives	List of achievements that describe what students are able to do after successfully completing the course. They describe the ultimate but feasible level of the course. Synonym at other universities: learning outcome, intended learning outcome. Abbreviation: LOs. Singular: LO
LMS	Learning Management System. At TU Delft, this is currently Brightspace.
lockdown browser	Prevents students to access other applications than the browser needed to access the test, and that limits the access of the browser to the test, and to whitelisted pages. Also called *secure browser*.
mark	*Noun:* Can mean either *score* (points for an exam question) or *grade* (converted from the score), depending on country of origin. Not used at TU Delft to prevent confusion.

Verb: evaluating student work as an assessor or examiner, while attributing points per question or assessment criterion and/or adding feedback. Synonyms: grade, score, evaluate, review.

meta data	Characteristics of (sub)questions in an assessment tool that either the lecturer attributes (for example learning objective, topic, difficulty, peer review status), or that the assessment tool attributes based on historical data (for example history of use in tests, parent, p-value, RiR-value).
midterm	*in the context of exams*: An exam in the middle of the educational period, which typically covers the first half of the course and counts for up to 50% of the course grade.
	in the context of graduation projects: an interim evaluation / feedback moment during the project, typically halfway the project. Depending on the faculty/programme, this can include a decision on continuation of the project.
	in the context of accreditation / quality assurance: an internal evaluation halfway between accreditations (3 years after the accreditation) to check the progress of the programme in terms of the NVAO standards.
model answer	Correct answer. In some cases, multiple correct answers exist. The one that is handed to the students is called the model answer. The model answer could also contain multiple correct answers or answer routes.
multiple choice question	
	Question type that requires students to pick <u>one</u> out of a number of proposed answers. See also: multiple select question, closed-ended question.
multiple select question	Question type that requires students to pick <u>one or more</u> out of a number of proposed answers. See also: multiple choice question, closed-ended question.
online proctoring	Online proctoring is only possible for closed-book tests if it is not possible to assess the course using open-book tests, i.e., in case of knowledge exams or exams on math questions for which the answers can be achieved using symbolic computation software (e.g., Maple, Mathematica,

	MATLAB) or online tools. Permission from the board of examiners is required[vvv].
open book test	Historically, this meant that students could bring the course's book (and sometimes a list of other books) to the exam hall. In case of remote tests, 'open book' implies access to the internet as well. Contact with other people is prohibited.
open-ended question	Question to which the set of correct answers is not given by selecting an answer from a limited number of options (see closed-ended question). In case the answer is not predictable, manual scoring requires the help of a rubric or answer model.
oral check	Fraud detection method conducted after an unsupervised assessment, during which examiners question individual student from a (quasi) random sample of the entire student population on their submitted work. The goal is to evaluate the likelihood that the student was the actual author of the submitted work.
Osiris	student information system in which student register for exams and in which lecturers communicate course grades and in some programmes also partial grades.
p-value	Normalized average score per subquestion or question. Formula: p-value = average score / maximum score. Example: p=1.0 implies all students received maximum score. p=0 scored on average 0 points. p can be negative if minus points are awarded. However, this is not recommended. The p-value is a measure for the 'difficulty' of a question, to which it is inversely proportional: the more difficult a question is, the lower it p-value. NB: This is a different p-value from the one in statistical context.
paper exam	Exam during which the student writes the answers to questions and/or assignments on paper.

[vvv] See https://www.tudelft.nl/en/student/legal-position/education-regulations/online-proctored-examination-regulation

parameterized question	
	(sub)question in which both the question and correct answer depend on defined parameters or variables (numerical and algebraic) that are stated in the question description. The parameter values are determined randomly for each realization of the question.
partial grade	Grade for an assessment within a course. The weighted average of al partial grades forms the course grade. In most faculties, partial grades have a minimum value in order to pass the course. Partial grades can consist of subgrades (see *subgrade*).
passing grade	The minimum grade that is required to pass a course. At TU Delft, this is 6.0 after rounding the final course grade to halves.
PDCA cycle	Plan-do-check-adjust cycle; a way of improving processes or products iteratively. For assessment, it implies that the examiner plans a good assessment (Plan), administers, and grades the assessment (Do), checks the quality of the assessment based on test result analysis and/or student input (Check), and adjusts the next assessment based on the findings (Adjust).
peer review	Process during which other lecturers review individual questions or entire tests and give feedback on the question-and-answer model.
peer reviewer	Lecturer who reviews questions or the test before the test is administered to students.
practice exercise	Questions like the ones that can be found in standard textbooks. Goal is to train students to master the level of the learning objectives. These questions help students to master the learning objectives by gradually increasing in complexity. Unlike formative assessments, they typically, are not (yet) at the level of the learning objectives. Also called 'scaffolding questions'.
proctor	Invigilator who invigilates video recordings of remote exams.
programme	Educational programme (combination of courses and graduation project). Students receive a MSc degree or BSc degree after successful completion of a programme.

question	Single question to which the student needs to formulate or otherwise indicates an answer/answers. A question can consist of a coherent set of sub questions. (Terms used in other places: item, assignment)
question bank	Digital collection of questions (which can consist of sub questions) that can be used for a test. Questions can be labelled with characteristics, like metadata and keywords. (Term used in other places: item bank)
question pool	A set of similar questions of comparable difficulty, from which the assessment tool randomly selects a question to create unique exams.
RACI matrix	Matrix that indicates per tasks or process (rows) who (columns) is accountable (A) for this task/process, who is Responsible (i.e. who needs to take action), who can be held Accountable, who needs to be Consulted, and who needs to be Informed.
remote assessment	Assessment that would normally take place on campus that take place online due to exceptional circumstances such as corona. Requires special fraud prevention measures and possibly approval from the board of examiners and/or educational management.
repair option	Possibility for students who did not pass a course in one go, to pass the course that year. Only applicable for courses with other assessment forms than exams. Example: assignments, projects, lab work, etc. The repair option does not require redoing the entire assessment; This only requires delivering an updated version or doing a smaller repair assignment. Typically, a maximum grade applies.
result	Result of a test or course that is communicated to the student. The result typically is a grade between 1 and 10, rounded to decimals, but a result can also be 'pass' or 'fail'. If a student does not show at an exam, the examinator can register 'NV' (no show), which is technically not a result.
responsible lecturer	See 'course coordinator'
retake / resit	Second opportunity in a year to sit an exam. Primarily meant for students who missed the main exam due to circumstances, but open to all students.

retention period	How long e.g. a document should continue to exist. See also: archiving period.
random	Generate one or more (quasi)random values within a range that is predefined, striving for a uniform occurrence over the range. This promotes that all values will occur with about the same frequency, even in small groups.
Rir-value	Correlation between the student scores for a certain (sub)question, and the total student score for all other (sub)questions. Low Rir-values indicate that otherwise good performing students (on this assessment) score poorly on this question.
Rit-value	Correlation between the student scores for a certain (sub)question, and the total student scores. Low Rit-values indicate that otherwise good performing students (on this assessment) score poorly on this question. The Rir-value is more accurate.
rubric	Matrix used to determine the score per criterion that the students are assessed on. For all criteria (rows), the requirements for each level (columns) are described as descriptors in the cells of the matrix. Either the criteria are weighted and the points per level are the same for all criteria, or the points per level differ between criteria. Used to score essay-like questions as well as larger assignments/projects.
safeguarding	Making sure that something happens, without having to do it yourself. Synonym: securing, guaranteeing. Dutch: *borgen.*
score	Number of points that an assessor gives to a student for their answer to a (sub)question. Total score is the total score for an assessment.
score-grade transformation	Determining the grades from the students' total scores. Typically implemented as a single linear equation ($y = a \cdot x + b$) or two linear equations (one for scores below the cut-off score and one for scores above the cut-off score).
scoring	Process of determining individual student scores on (sub)questions in a test (terms used in other places: marking, grading).

scoring guide	Indicates in an answer model how many points should be added for each correct part of the student answer and subtracted per error/omission.
section	Group of questions in a test that belong together. Sometimes used for dividing the test into different topics, or types of questions. Assessment tools typically can apply specific rules per section (terms used in other places: part, block).
secure browser	Software on the student's device that limits the access to internet, other applications, or peripherals with the goal of preventing a student from accessing forbidden information during a test. Also called *lockdown browser*.
securing	Making sure that something happens, without having to do it yourself. Synonyms: safeguarding, guaranteeing. Dutch: *borgen.*
selection list	Official national document that dictates how long documents resulting from educational processes like assessment need to be archived and whether these need to be destroyed after this period. Most assessment related documents fall under process 54, which is abbreviated as 'SL proc. 54'. Section 3.4 is dedicated to the archiving of assessment and degree related documents. Official name: 'Selection List Universities and University Medical Centres 2020' (S*electielijst Universiteiten en Universitair Medische Centra 2020*).
standard feedback	Feedback to students that is connected to the answer model. In case of certain errors or correct steps, students receive standard feedback. Example: 'You forgot to square c in $E = m{\cdot}c^2$.'
STEM	Science, Technology, Engineering, Mathematics.
stem	The stem of a question is the first part, that precedes the question and the instructions (in the case of open questions) or the answer options (in the case of multiple-choice questions).
structured feedback	Feedback that is structured per applicable LO or assessment criterion. The term is used as the opposite of 'unstructured feedback', in which not all LOs or criteria are systematically assessed.

student assistant (SA)   Student who has a job in a university where they assist employees. In case their job description is focussed on education, they are called 'student assistants'. In case their job description is focussed on support (e.g. at TLS), they are called 'support assistants' (SAs), and otherwise 'teaching assistants' (TAs). However, the latter term is also in use for non-students like PhD students and postdocs.

student information system (SIS)

In SIS, students can register for assessments and view their study results. At the TU Delft: Osiris.

(student) review   Possibility for students to review/inspect their graded work and discuss objections to the score with the examiner.

student work   Something that was created by a student. Example: homework, assignments, report, exam, etc. Typically, teaching staff provides feedback to student work, and/or grades student work.

support assistant (SA)   student who has a job at TLS to support lecturers in their teaching, for example by providing help on the use of tools.

subgrade   One of the subgrades within a partial grade or within an assessment. Example 1: an exam can have a subgrade for open-ended questions and a subgrade for closed-ended questions, of which the weighted average is the exam grade. Example 2: a partial grade for lab work can consist of several subgrades per lab day. Subgrade should not be confused with partial grades of a course (see *partial grade*).

subquestion   Part of a question, e.g., question 1b, to which a student needs to formulate or otherwise indicate an answer.

summative assessments

Any assessment that contributes to the final result (grade or pass/fail) of a course. This includes mandatory activities in the course.

Teaching & Learning Services   Organization that supports lecturers of the entire TU Delft with training, advise, and support.

teaching assistant (TA)	Someone who has a job to assist a lecturer in their teaching. In the context of assessment, teaching assistants (TAs) can help entering questions in an assessment tool, review questions, monitor and help during the test, and help scoring student answers in the assessment tool. They do everything under close supervision of the examiner. Often used as a synonym of student assistant, although in some faculties like Applied Science, also PhD's and postdocs can be teaching assistants.
teaching week	Teaching weeks are weeks during which educational activities take place. They are numbered $p.w$ where p is the period number (periods 1-4 are the regular periods; period 5 is the summer period that is only used for resits which lasts either 9 or 10 weeks, depending on the year), and w is the week number (1-10). Week 1.1 is the first or second week of September. See https://www.tudelft.nl/en/student/education/academic-calendar
technical application manager	Employee who deals with the installation, approval, and the process of making the technical systems and infrastructure operational and keeping them that way.
test	An assessment of (a part of) the learning objectives of a course. It can have the form of a written exam, a try-out exam, a midterm, or homework assignments that can be summative or formative, but not a project or presentation. Practice exercises like in standard textbooks are not considered tests.
test duration	Allowed maximum duration during which students can take the test.
test result analysis	Overview of quality indicators on sub question, question, and test level (e.g., p-value, maximum score, correlation with rest score, Cronbach's alpha). Goal: to determine learning objective achievement of the group, and to determine indicators to improve the answer model/scoring guide before publishing the grades.
total score	Sum of all scores in a test for a single student.
UTQ exemption	Exemption from the obligation to obtain UTQ qualification, based on an assessment to determine that the candidate has a level equivalent to the

UTQ level. This can be based on an equivalent certificate, or an assessment of an educational portfolio. Each faculty has their own UTQ exemption procedure[43]. See **6.1**.

F.2 Translations English-Dutch

English	Dutch
assessment	toetsing of toets
assessment criteria	beoordelingscriteria
assignment	(grote) opdracht, vaak bestaande uit meerdere oefeningen.
board of education	opleidingsdirectie
board of examiners	examencommissie
board of studies	opleidingscommissie
cut-off score	cesuur
degree programme	examenprogramma
director of education	directeur onderwijs
director of studies	opleidingsdirecteur (also: programme director)
examiner	examinator
exercise	(kleine) opdracht/oefening
intended learning objective	eindterm
invigilator	surveillant
lecturer	docent
learning objective	leerdoel
programme	opleidingsprogramma
programme director	opleidingsdirecteur (also: director of studies)
Rules of Procedures for Examinations	reglement van orde bij tentamens (RvO)

F.3 Acronyms

Acronym	Description
3mE	Faculty of Mechanical, Maritime and Materials Engineering (Werktuigbouwkunde, Maritieme Techniek & Technische Materiaalwetenschappen, 3mE)
4TU	federation of four Universities of Technology (TU) in the Netherlands
ABE	Architecture and the Built Environment (*Bouwkunde, BK*)
ACT	Academic Career Track
AE	Faculty of Aerospace Engineering (*Luchtvaart- en Ruimtevaarttechniek, LR*)
AS	Faculty of Applied Sciences (Technische Natuurwetenschappen, TNW)
AT	Assessment Taskforce
BBR	*Bestuurs- en BeheersReglement* (Executive and Management Regulations, EMR)
BoEd	Board of Education (*opleidingsdirectie*)
BoEx	Board of Examiners
BSc	Bachelor of Science
BSA	Binding recommendation on the continuation of studies
BYOD	Bring Your Own Device
CBE	*Commissie voor Beroep van de Examens*, Examination Appeal Board (EAB)
CEG	Civil Engineering and Geosciences *(Civiele Techniek & Geowetenschappen, CiTG)*
CvB	Executive Board (*CvB*)
DE	Digital Exams

DEE	Digital Excellence for Education
EAB	Examination Appeals Board (see *CBE*)
EB	Executive Board (*CvB*)
EC	European Credit (*studiepunt*)
ECTS	European Credit Transfer System (*studiepuntuitwisselingssysteem*), sometimes incorrectly instead of EC
ED	Exam Desk
EEMCS	Faculty of Electrical Engineering, Mathematics & Computer Science (*Elektrotechniek, Wiskunde & Informatica, EWI*)
EMR	Executive and Management Regulations *(Bestuurs- en beheersreglement TU Delft, BBR)*
EMT	Educational Management Team
ESA	Education & Student Affairs
ESA-SPA	Education & Student Affairs – Study Programme Administration
FA	Final attainment
FAB	Functional Application Manager
FAL	Final Attainment Level, also called ILO
FoA	Focus on Assessment
FR	Faculty Regulations
FSC	Faculty Student Council
FTE	full-time equivalent
GPA	Grade Point Average
HERA	Higher Education and Research Act (*Wet op het Hoger onderwijs en Wetenschappelijk Onderzoek, WHW*). We use 'WHW' because there is no English version available.

HOS	Meeting Heads of ESA (Hoofden Onderwijs & Studentenzaken)
HR	Human Resources
IDE	Faculty of Industrial Design Engineering (*Industrieel Ontwerpen, IO*)
ILO	Intended Learning Outcome, FAL is more common in Delft
IM	Information Management
IM-SPA	Information Management - Security, Privacy and Architecture
LO	Learning Objective
mcq	Multiple Choice Question
MSc	Master of Science
MT	Management Team
ODO	Meeting Directors of Education (*Overleg Directeuren Onderwijs*)
O&S	Education and Student Affairs, ESA (*Onderwijs- & Studentenzaken*)
PDCA	Plan-do-check-adjust or plan-do-check-act (see, PDCA cycle)
PhD	Doctoral student (*promovendus*)
P&I	Policy and Implementation (department of ESA)
R&D	Result & Development Cycle
R&G	Rules & Guidelines of the Board of Examiners
RACI	Responsible, accountable, communicate, inform
RPE	Rules of Procedures for Examinations (*Reglement van Orde bij tentamens, RvO*)
RvO	*Reglement van Orde bij tentamens* (see RPE)
SA	Student Assistant (general), or Support Assistant (at TLS)
SAP	Supervision and Assessment Principles (course)
SC	Student Council

SEQ	Senior Examination Qualification (course)
SL	Selection List Universities and University Medical Centers 2020 (*Selectielijst Universiteiten en Universitair Medische Centra 2020*[27])
SPA	Study Programme Administration
SSO	Single sign-on
T3.A1	Foundations of Educational Design (Graduate School course)
T3.A3	Assessing students and master thesis projects (Graduate School course)
T3.B1	Coaching Individual Students and Project Groups (Graduate School course)
TA	Teaching Assistant
TAB	Technical Application Manager
TER	Teaching and Examination Regulations
TIL	Transport, Infrastructure and Logistics
TLS	Teaching & Learning Services
TPM	Faculty of Technology, Policy, and Management (*Techniek, Bestuur en management, TBM*)
TLS	Teaching & Learning Services
UNL	Universities of The Netherlands (previously *VSNU*)
UTQ	University Teaching Qualification (training programme)
Wgbh/cz	Act on Equal Treatment of the grounds of Disability or Chronic Illness, *Wet gelijke behandeling op grond van handicap of chronische ziekte*
WHW	Higher Education and Research Act (*Wet op het Hoger onderwijs en Wetenschappelijk Onderzoek, WHW*). Sometimes abbreviated as 'HERA'