

A photograph showing a group of people, mostly women, sitting at desks and working on laptops. The scene is brightly lit, and the focus is on the individuals and their workstations. The text is overlaid on the right side of the image.

Plan for the implementation of the quality agreements at TU Delft

Addendum to the Strategic Plan
TU Delft Strategic Framework 2018-2024

Colophon

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Press

Edauw en Johannissen

2019, TU Delft
www.tudelft.nl

Note to the English Translation

In the event of any difference of interpretation between the Dutch text and the translation, the Dutch version of this document ('Plan voor de uitvoering van de kwaliteitsafspraken aan de TU Delft') shall prevail.



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Introduction

This document outlines the plan for the use of funds from the student loan system ('studievoorschot-middelen') and for the implementation of the quality agreements ('kwaliteitsafspraken') at TU Delft. This plan translates the agreements laid down in the 'Sector Agreement on University Education 2018'¹ ('Sectorakkoord wetenschappelijk onderwijs 2018') into specific measures and policies at our University. This plan is an addendum to the TU Delft strategic plan, 'TU Delft Strategic Framework, 2018-2024'.

At the heart of this plan are the six themes agreed by the Minister of Education, Culture and Science (OCW) and the Association of Universities in the Netherlands (VSNU), with the approval of the Dutch National Union of Students (LSVb) and the Inter-city Student Consultation (ISO), in the Sector Agreement, and on which the investments within the framework of the quality agreements should focus:

1. More intensive and small-scale teaching (programme intensity)
2. More and better supervision of students

3. Study success
4. Educational differentiation
5. Suitable and high-quality teaching facilities
6. Further professional development for lecturers (quality of lecturers)

The Sector Agreement is not a stand-alone tool. It is an important moment in a process that started as early as 2015 with the commitment by the universities to use their own resources – in anticipation of the income expected as a result of the introduction of the student loan system – in order to be able to accelerate the implementation of the activities for which the student loan funds are intended. At TU Delft we have also taken this on board and are investing a total of approximately €26 million from our own resources, often to appoint additional permanent teaching staff. This means that, to a large extent, at TU Delft funds from the student loan system have already been allocated to structural investments.

The current document contains detailed information on the use of these funds, the objectives they set out to achieve and the progress we hope to make with these efforts. The plan

¹Sector Agreement on University Education 2018, Amsterdam, 9 April 2018.

also explicitly indicates how these investments are in keeping with the history and context of TU Delft and our broader educational ambitions as formulated in the TU Delft Strategic Framework 2018-2024 and our Vision on Education. In this document we also describe the relationship between these investments and the six themes mentioned above.

In addition to the investments made by TU Delft itself, from 2018 onwards we will receive funds from the ministry of Education, Culture and Science (OCW) that have been released from the student loan system. It is expected that this annual contribution from OCW will increase to such an extent that, from 2021 onwards, funds will be available for new investments at TU Delft within the framework of the quality agreements. The University's representative bodies (General Assembly of Councils) and the Executive Board have agreed on four basic principles for using these funds.

- As such, these investments will be in line with long-term strategic choices on which joint agreement has already been reached, as laid down in the TU Delft Strategic Framework 2018-2024 and our Vision on Education (2017).
- Since our long-term strategy attaches great importance to all six themes mentioned in the

Sector Agreement, we want to be able to use the available funds on each of these themes.

- Rather than commit ourselves to specific themes and measures in advance, we choose to give ourselves enough freedom to respond to needs as they arise (within the context of the six themes).
- In doing so, we will continue the agreements made in connection with the pre-investments.

The current document describes how the decision-making process with regard to the structural investments in quality improvement took place between 2015 and 2017, how these expenditures will be monitored in the coming period, and provides a clear overview of the process that will be followed for the allocation of additional resources from 2021 onwards. The central issue is to use these resources most effectively in order to improve the quality of education for all students at TU Delft. Representative bodies – both University-wide and Faculty bodies – will play an essential role in this process.

In **Chapter 1**, we outline the history of the quality agreements, namely the pre-investments ('Voorinvesteringen') during the years 2015-2016, their continuation in 2017 and the broad strategy process in 2017 that has led to our strategic plan,

the TU Delft Strategic Framework 2018-2024, to which the present document is an addendum. This chapter contains detailed information about funds from the student loan system that have already been invested and how these are in line with the six themes. We will discuss the objectives of these investments as well as the progress we hope to make with these efforts.

Chapter 2 focuses on the six themes. It explains how each of these themes plays an important role in the Strategic Framework 2018-2024 and the Vision on Education, which was developed in 2017.

Finally, **Chapter 3** sets out the process for allocating the funds from the student loan system that will become available for spending from 2021 onwards, and how these will be reported on and monitored. Explicit attention is paid to the role of the representative bodies in this process.

Appendices 1 and 2 provide more information about the plans agreed in 2015 and 2017 (for the first and second rounds of pre-investments, respectively), as well as the intended objectives and proposed measures. **Appendix 3** outlines the basis for the allocation ratio for allocating funds from the student loan system to faculties as from

2021 onwards, **Appendix 4** provides descriptions of the six themes, and **Appendix 5** gives an explanation of the abbreviations used in this document.

Note to the English Translation

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Chapter 1: The proces

1.1 Pre-investments (2015-2018)

In anticipation of the expected revenues from the introduction of the student loan system ('leenstelsel'), since 2015 TU Delft has been investing its own resources in order to accelerate the implementation of the activities for which the student loan funds ('studievoorschot-middelen') are intended. It concerns the following sums (in millions of euros):

	2015	2016	2017	2018
Pre-investments	6	6	8	2.8
Funds from OCW	-	-	-	5.2
Total	6	6	8	8

Table 1: Pre-investments at TU Delft

In 2015, as part of the 2016 budget process, faculties were invited to submit proposals that were in line with the framework of the Student Loans (Higher Education) Act ('Wet Studievoorschot'). These proposals were discussed extensively with the Faculty Councils, the Central Student Council and the General Assembly of Councils, and were assessed on the basis of five criteria, which are closely in line with the Strategic Memorandum on Higher Education issued by the Ministry of OCW:

1) Favourable assessment of proposals which lead to smaller class sizes.

- 2) Favourable assessment of proposals which reduce workload.
- 3) Proposals must not concern overdue or regular updates to the curricula.
- 4) Proposals must not be related to internationalisation.
- 5) Proposals concerning professional education are less appropriate for these resources.

Table 2 gives an overview of the proposals that were approved at the end of 2015. Appendix 1 provides a detailed explanation of these proposals, including the intended objectives and the proposed measures. These proposals mainly called for a structural increase in teaching capacity with a view to increasing the staff-student ratio and reducing the workload. The Executive Board and the representative bodies both agreed that this was an obvious choice. In addition, some funds were made available for other proposals, such as the increase of workplaces for students and the improvement of lecturer quality at the Faculty of Architecture and the Built Environment by developing the Design Didactics 2 course.

Table 2: Proposals approved in 2015, overview per faculty

Faculty	Description of proposed activities	Sum (in thousands of euros)
A+BE	Investment in lecturer quality	300
	Implementation of open & online education	
CEG	Programme intensification; more small-scale teaching	900
EEMCS	Expansion of inter-faculty mathematics education	900
	Investment to improve ES mathematics	
IDE	Making more time available for each individual student	500
AE	Intensification of educational support; Student support; Improving lecturers' skills	500
TPM	Programme intensification; Increasing lecturer capacity	300
AS	Future-proofing education	500
3mE	Increasing capacity to supervise Master's students; Reducing the burden on lecturers in the Bachelor's phase	1,500
General	Study workspaces	100
General	Student activities	300
General	Activities for lecturers (training, professionalisation)	200
Totaal		6,000

In 2017, these pre-investments were reviewed with the representative bodies and the progress of the projects was discussed. It was agreed that in those cases where budgets were not entirely spent, the remaining funds could be spent on other projects that would contribute to the overarching objectives. In the second phase, the pre-investments for 2017 were also discussed with the relevant faculties so that they could be better informed about the proposed execution. Two years later, the Executive Board decided to invest an additional sum of €2 million a year from 2017 onwards in teaching capacity expansion, in response to repeated complaints from teaching staff about high workload. This issue was also raised by the representative bodies. This request was submitted by the General Assembly of Councils and is a concrete example of a result issuing from the GAC's (General Assembly of Councils, i.e. the Central Student Council and the Central Works Council) right to approve the main lines of the budget. The allocation of these resources was made dependent on teaching loads, based on a comparison between multi-year figures on the increase of ECTS credits and student numbers and permanent academic staff per management unit. Where possible, current developments were taken into account alongside the historical figures. The Board used these data to calculate the allocation of funds. In this context, €0.5 million is allocated annually to the Faculty

of EEMCS to increase the teaching capacity for service teaching in mathematics, and €1.5 million to the Faculty of 3mE to increase the teaching capacity in order to cope with the rapid increase in Master's students over the past few years. More details about these plans can be found in Appendix 2.

By approving the complete set of proposals (totalling approx. €8 million a year), pre-investments at TU Delft up to and including 2021 will largely be spent on permanent staff; these are therefore structural expenditures.

1.2 Process agreements for the period 2019-2024

Since June 2018, when we received the invitation from NVAO to submit an application for the assessment of the quality agreements, regular consultations have taken place at TU Delft within the so-called 'working group on quality agreements' between representatives of the representative bodies (Student Council and Works Council) and the education portfolio holder from the Executive Board regarding the process. The overall aim was to reach broadly supported quality agreements that would be most conducive to the quality of our education and the welfare of our students.

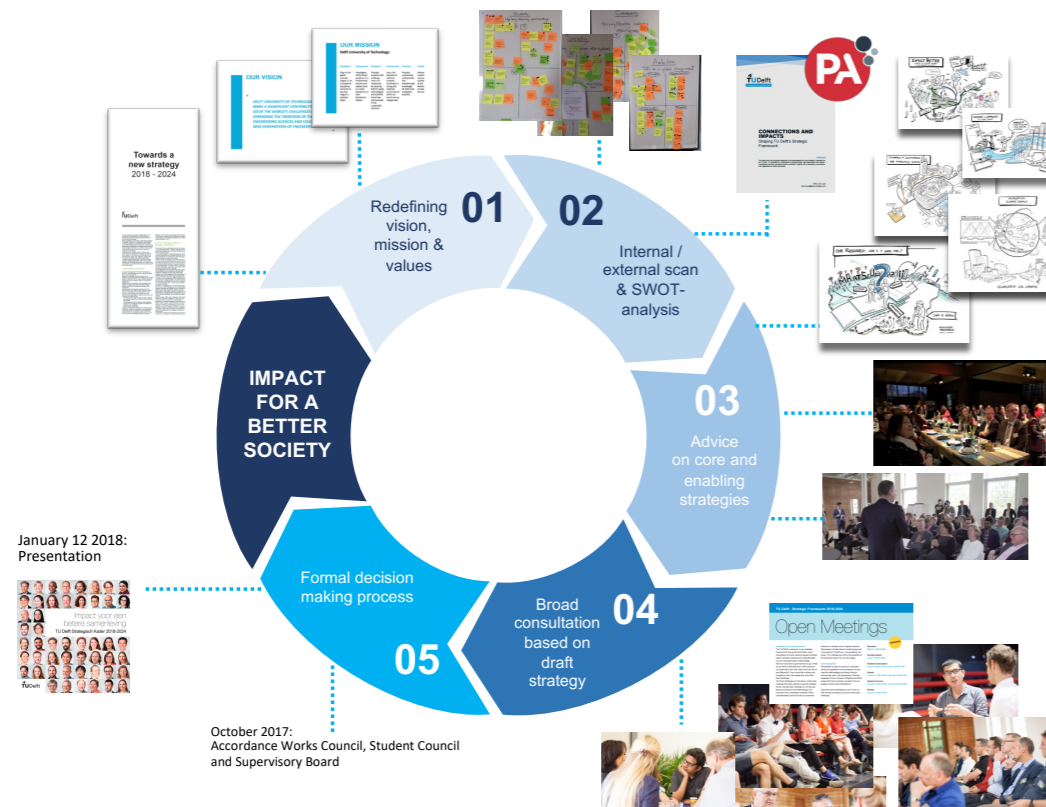


Figure 1: The plan for discussing TU Delft's long-term strategy, 2018-2024

The first question discussed in this working group concerned the dialogue to be conducted. Over the past two years, at TU Delft we had been carefully reflecting on the future direction of the University, by engaging in a wide-ranging dialogue with our internal and external stakeholders. In order to produce a new strategic

plan and a new vision for education, between 2016 and 2017 we devised and implemented an intensive process in which a total of more than 800 people participated actively: students, PhD students, researchers, support staff, deans, directors and alumni, as well as stakeholders outside TU Delft, such as our business partners,

other educational institutions, civic organisations, and regional governments.

Through this process, we have together been able to make strategic choices for the long term, which have been laid down in the 'TU Delft Strategic Framework 2018-2024' and the 'Vision on Education'. The quality agreement working group proposed (ultimately leading to a formal agreement with the Board and the General Assembly of Councils) that these strategic choices should be the guiding principle when drafting the quality agreements. The quality agreements are thus an addendum to the existing Strategic Framework, as indicated in the Sector Agreement. The decision was made not to start a new University-wide consultation process at that point.

Another point of interest was the historical aspect. As explained in Section 1.1, the quality agreements are only one step in a process that began in 2015 with the pre-investments. Consequently, the starting point for future quality agreements, were the agreements made during the pre-investment period. Since TU Delft had decided to allocate almost all of its pre-investments to attracting additional teaching staff (see Section 1.1), these funds had largely been spent. It is expected that additional funding from the student load system will not be available

until 2021, which can then be used for new investments. Partly because of this, we wanted to ensure that we had the necessary flexibility to keep these future funds as free as possible until then, and not to set out specific themes and plans in advance. When the time comes, we want to be able to use these funds to respond, as much as possible, to the needs of the moment (obviously within the context of the six educational themes). This is also important because the situation at TU Delft has been subject to strong, unpredictable fluctuations in recent years, such as the influx of international students. Even more importantly, we highly value the ability to each year involve the then sitting Student Council (whose composition changes every year) in the decisions regarding that year's investments; we believe this to truly reflect the spirit of the Sector Agreement.

Based on these considerations, in the second half of 2018 the working group focused on the design of a transparent and clearly defined decision-making process in order to decide how the funds from the student loan system will be used in the coming years. The allocation of funds must:

- Meet the criteria of the protocol.
- Maximise the positive impact on the quality of our education and the welfare of our students.
- Reinforce the role of representative bodies, both within faculties and University-wide.



- Wherever possible, the regular proceedings must be followed, thereby keeping the red tape to a minimum.

This process is laid down in the quality agreements that have been made at TU Delft. Detailed information about these agreements can be found in Chapter 3. The General Assembly of Councils has expressed its confidence in these agreements. They have also been approved by the Supervisory Board.

Finally, it is important to note that the process so far has been managed by the central organisation of TU Delft - the Executive Board and the central representative bodies. This is due to the route that has been chosen: to first agree on an overall framework, within which decisions on specific investments can be made in the coming years. In this follow-up phase, the focus will no longer be on the central organisation and will instead shift toward the faculties. As mentioned in Chapter 3, and similar to the pre-investment process, most of the funds from the student loan system will be channelled through the faculties. After all, the faculties are in the best position to assess what their degree programmes and students really need at any given moment. The faculty representative bodies will play an important role in this process. We believe that it is crucial that faculty representative bodies

are able to properly perform their role in the quality agreement process and that they receive sufficient support in this regard. A number of provisions on this subject have therefore been explicitly included in the quality agreements. FSCs (Faculty Student Councils) and PCWCs (Personnel Committees of the Work Council) will be asked to send a joint letter when submitting the faculty budget, in which they will report on their involvement in the preparation of the plans for funds from the student loan system. This report will be discussed in the autumn (budget) consultations between faculties and the Executive Board. In addition, the plans for investing funds from the student loan system and the associated role of representative bodies will be covered in the regular training for faculty representative bodies.

Chapter 2.

The themes

2.1 Introduction

When developing the plan for implementing the quality agreements, the long-term strategic choices laid down in the TU Delft Strategic Framework and the Vision on Education are taken into account. All six themes are of key importance to TU Delft. TU Delft already commits – and will continue to commit – to all these themes through its regular budget.

In this Chapter, we will briefly discuss the six themes mentioned in the quality agreements (see Appendix 4 for the definitions of the themes), namely:

1. More intensive and small-scale teaching (programme intensity)
2. More and better supervision of students
3. Study success
4. Educational differentiation
5. Suitable and high-quality teaching facilities
6. Further professional development for lecturers (quality of lecturers)

We explain how each of the six themes fits in with TU Delft's broader educational ambitions and its (educational) vision and the Strategic Plan. The previous chapter already outlined how the faculty proposals for using funds from the student loan system reflect these themes.

This chapter refers to the documents specified below:

- TU Delft Strategic Framework 2018-2024, January 2018 (SF)
- TU Delft Vision on Education, November 2017 (VoE)

2.2 Linking the themes to the Strategic Framework/Vision on Education

The six themes all feature prominently in the Strategic Framework and the Vision on Education. The TU Delft Strategic Framework 2018-2024 is TU Delft's Strategic Plan. This framework acts as a compass, providing everyone in the organisation with guidelines on how to deal with changes in our environment and make the most of opportunities in the coming years. It is not a 'top-down' blueprint or work plan - rather, it expresses the values, principles and objectives that have been agreed upon by the TU Delft community and that will shape and distinguish our daily activities in the years ahead. We will also use this compass when making decisions about the use of funds for the quality agreements. The 'TU Delft Vision on Education' is a further elaboration of the chapter 'Students and Education' (SF). This vision and strategy for students and education is currently being translated, under the leadership of the Vice-Rector Magnificus/ Vice President for Education, into a long-term education policy plan for the coming years.

In the VoE, the education offered and support provided to students at TU Delft is characterised as follows: 'We see it as our responsibility to guide students and PhD candidates to take control of their own development and learning process.

Features of our teaching are:

- We combine state-of-the-art scientific theory with practical application.
- We use diverse teaching methods to stimulate active learning.
- We use digital technologies, such as online- and blended learning, to enhance teaching & learning.
- We train students to apply and integrate knowledge and skills in interdisciplinary tasks.
- We train students to cooperate with students from different disciplines and backgrounds in order to solve multidisciplinary tasks.
- We confront students with the context of their future professional practice.
- We prepare students for lifelong learning.

This requires from students that they:

- Are eager to learn and show an active and engaged study attitude.
- Have the ambition to make the most of their study period at the TU Delft and develop themselves academically as well as personally.
- Make effective use of the time of our academic staff providing instruction, coaching and supervision.

- Responsibly use the world-class facilities we provide for education and research.

This requires from our academic staff that they:

- Display a passion to share their knowledge and inspire and challenge students.
- Translate theory to practical application.
- Have the didactical and organisational skills to provide high-quality courses.
- Take responsibility, not only for their course(s) but for the quality of the whole programme.
- Are open to learn – or contribute to experimenting with – new (evidence-based) teaching and assessment concepts for engineering education.
- Introduce students to their academic and business networks.
- Continuously strive to develop and improve themselves as teachers, supervisors and educational leaders. (VoE, Our approach to teaching and learning)

This demonstrates TU Delft's commitment to focusing on each of the six themes in the coming years. This chapter explains in more detail how this will be achieved.

1. More intensive and small-scale teaching (programme intensity)

Technical education is, by nature, intensive (many contact hours). To be able to cope with the rise in the number of students, an integrated capacity plan is being developed which includes policy proposals for the number of academic staff and lecturers' work balance, among other things. The pre-investments for 2016 were spent on projects that focused on the introduction of more FTE (for small-scale teaching, among other things) and better student facilities (VoE, Directions for further development, Our graduates, see also Table 2). This means current intensive and small-scale (practical) teaching can be continued, even with an increasing number of students.

2. More and better supervision of students

In 2015-2016 pre-investments helped to increase teaching capacity, thereby reducing teaching loads for the lecturers. This has enabled us to continue to provide intensive support for TU Delft students during their theses (individual support from a staff member and a second and sometimes third reader). At

the Faculty of 3mE, in addition to around 30 lecturers, an academic counsellor (0.5 FTE) and a workplace supervisor (1.0 FTE)² have been appointed using funds from the student loan system to support first-year teaching.

3. Study success

In the Strategic Framework (SF, p. 19) we announced that we will implement a further set of measures to improve study results. These measures will be in line with the quality agreements. Based on an evaluation of the Study Success programme and the BSA, an implementation plan is currently being drawn up for Study Success 2.0 – a plan that is primarily aimed at improving the 'studiability' of degree programmes.

4. Educational differentiation

In line with the long-term strategy (SF, p. 20), the (elective) space in the Master's degree programmes will be increased so that students can build a solid foundation in terms of interdisciplinary skills, sustainability and entrepreneurial thinking / entrepreneurship. In addition, students will be given the opportunity

² The supervisor at the Open Workshop for Students provides instructions to first-year students and is a support-staff position.



to collaborate with students from other faculties, from Rotterdam or Leiden, or from other technical universities within the framework of various LDE initiatives and 4TU programmes. The degree programmes will also teach skills that are in high demand in today's world, such as communication, ethics, critical thinking and digital skills. More use will be made of the possibilities of online education, for example through the extension school and international partners. Students will be better able to switch to and from Universities of Applied Sciences (HBO), for example through agreements with partner institutions in the region.

TU Delft's degree programmes will be expanded and strengthened through multi- and interdisciplinary programmes that are in line with and complementary to existing disciplinary degree programmes. All TU Delft degree programmes will incorporate digital skills into their curricula in a way that is relevant to their field. (VoE, p. Direction for further development, Our educational portfolio)

The education portfolio consists of:

- 'opportunities for students to personalise their graduation profile and pursue their own interests by including elective elements and in- or extra-curricular modules in addition to the compulsory curricula, such as:

- minors (30 EC of the 180 BSc credits)
- elective courses (BSc and/or MSc)
- tracks, specialisations and annotations
- honours programme (BSc and/or MSc)
- double degree programmes (BSc, MSc, PhD)
- student competition projects (Dreamteams)
- study abroad
- internships
- graduation projects
- doctoral education programme for general academic and transferable skills.' (VoE, p. Our educational portfolio)

5. Suitable and high-quality teaching facilities

TU Delft's ambition is 'to provide an inspiring, engaging and attractive study environment, which enables students to develop themselves into critical, result-oriented and socially responsible engineers' (VoE, Educational goals and quality ambitions). Campus facilities are also taken into account in the development of policy plans aimed at anticipating the growth in the number of students (VoE,

Directions for further development, Our graduates). With the number of students increasing every year and the growing need to accommodate state-of-the-art teaching and learning methods, TU Delft has developed its new PULSE teaching building right at the heart of the campus.

The campus will be modernised in the coming years

so that the primary process can continue to be optimally supported. (SF, p. 46-49)

6. Further professional development for lecturers (quality of lecturers)

In the R&D cycle for academic staff, more explicit attention will be devoted to teaching. This will create a culture and a career structure that offers academic staff the opportunity to excel in teaching, educational leadership and/or educational research. (SF, p.36) We ask and encourage our academic staff to 'continuously strive to develop and improve themselves as teachers, supervisors and educational leaders'. (VoE, Our approach to teaching and learning). New policies on this theme ('Guidance document for associate professors with a focus on teaching') has been approved in the second quarter of 2019.

Chapter 3.

The quality agreements

3.1 Scope of the resources

Since 2015, TU Delft has been investing its own resources in order to accelerate the implementation of the activities for which the student loan funds are intended. These funds come from TU Delft's reserves and are added annually to the faculties' budgets. In 2015 and 2016, the annual amount was €6 million. In 2017, it was increased to €8 million. From 2018 onwards, we will receive funds from OCW that have been released from the student loan system. In 2018, this amounted to €5.2 million. The expected amounts for 2019 and 2020 are €6 million and €7 million, respectively. During this period, TU Delft will pre-invest as much as necessary from its own resources in order to top up the funds from OCW to reach the total amount of €8 million. Since TU Delft had decided to allocate almost all of its pre-investments to attracting additional teaching

staff (i.e., staff in permanent positions, see Section 1.1), these funds have largely been fixed.

It is expected that the annual contribution from OWC will increase to such an extent that these pre-investments will no longer be necessary from 2021 onwards and that additional funding will become available for investments within the framework of the quality agreements. This is demonstrated in Table 3.

In order to ensure that each Student Council (new members are elected each year) receives an annual project budget, it has been agreed, at the request of the General Assembly of Councils, that the unspent part of the pre-investments will be returned to an investment fund, ensuring that this fund amounts to at least €0.5 million each year. If additional resources are required for this purpose, they will be granted on a conditional basis. This is demonstrated

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
OCW Contribution	-	-	-	5.2	6	7	11	14	15	17
Pre-investments	6	6	8	2.8	2	1	-	-	-	-
Brought forward (explanation in text)					0.5	0.5	-0.5	-0.5		
Total	6	6	8	8	8.5	8.5	10.5	13.5	15	17

Table 3: An estimate of the size of the OCW contribution and TU Delft pre-investments (in millions of euros)

	2019	2020	2021	2022	2023	2024
Total	8.5	8.5	10.5	13.5	15	17
Already systematically allocated	8	8	8	10	13	14.5
Available for new agreements. split over:	0.5	0.5	2.5	3.5	2	2.5
Investment fund (project-based. i.e. temporary)	0.5	0.5	0.5	0.5	0.5	0.5
Faculty plans (structural)	-	-	2	3	1.5	2

Table 4: Estimation of the funds available each year for agreements (in millions of euros)

in Table 3 in the 'brought forward' row. It should be noted that the amounts mentioned here are a rough estimate: whether the full amount of € 0.5 million in additional funds will be needed, and whether this will be repaid in the period 2021-2022, will be decided in close consultation.

What does this mean for the additional agreements that we will be able to make in the coming years? How much money will be available each year? A detailed answer to this question is given in Table 4. The first row ('Total') shows the sum of pre-investments and funds from the OCW (see details in Table 3). The second row shows which part of the Total has already been systematically allocated in previous years. This mainly concerns investments in permanent staff. The third row shows

the amount that is available to be spent freely on new agreements. This consists of the total amount minus the part that has already been systematically allocated.

The last two rows indicate how the available funds that can be spent freely are distributed between the investment fund and the faculty plans. This is further explained in Section 3.2. The point here is that expenditure within the investment fund is project-based (and therefore temporary, so that these resources are available for new agreements the following year) while the faculty plans are structural. Table 4 assumes that all faculty plans are structural. If some of these plans are of a temporary nature, these funds will become available to spend on new agreements once the project has come to an end. In that case, the faculty that had submitted these

plans will be invited to submit a new proposal for these funds, within the set objectives and themes. This proposal will then go through the regular decision-making process (see Section 3.2), and will also require the General Assembly of Councils' approval. The actual amount for new agreements will in that case be slightly higher than the amount shown in Table 4.

3.2 Process agreements

The Executive Board and the General Assembly of Councils have agreed that the funds available from the student loan system will be used in two ways: through an investment fund (from which temporary project proposals can be financed) and through faculty plans (for structural provisions).

Investment fund (central)

Part of the funds from the student loan system is reserved annually for an 'investment fund'. This guarantees that some of these funds can be spent freely each year, depending on the needs as they arise.

Each year, the remaining amount available for investments from the previous year is allocated to the investment fund. This will be supplemented to reach a fixed amount of €0.5 million per year. If additional resources are required for this purpose, they will be granted on a conditional basis; repayment will come from next year's budget

(possibly from a subsequent multiple-year budget in order to counteract undesirable fluctuations). Halfway through the agreement period, this amount can be evaluated and possibly adjusted.

This investment fund is used to fund project proposals. Faculties (including Board of Studies ('opleidingscommissies') and faculty student councils) and service departments (such as ESA, Library, ICT/FM) are invited to submit proposals. The following guidelines have been agreed for the proposals:

- The proposals contribute to at least one of the six themes and fall within the definitions set for those themes.
- The proposals are project-based. In other words, they do not require structural funding. Projects will have finished by the end of 2024.

The investment fund is organised as follows:

June: The annual framework ('jaarlijkse kaderstelling') includes the fixed amount of €0.5 million for the investment fund. This amount is earmarked for the ESA budget. ESA is responsible for project management and providing support for the decision-making process.

June – September: ESA includes the total amount of €0.5 million in the draft budget.

October: In the preceding period, the Student

Council has collected project proposals with input from University Services. The Student Council and Works Council jointly advise on the proposals submitted on the basis of the above guidelines, and submit their advice to the Executive Board for decision.

November – December: Depending on the decision-making process, the projects are prepared so that they can be launched in January. Approved projects are included in the final budget.

December: The TU Delft budget is approved by the Supervisory Board and adopted by the Executive Board. The General Assembly of Councils has the right to approve the main lines of the budget, including the funds from the student loan system³.

Faculty plans (decentral)

The faculties will be asked to draw up plans for the available funds that can be spent in the year in question. The plans should contribute to at least one of the themes and fall within the definitions set for those themes (see Appendix 4). In contrast to the investment fund, the aim here is to set up structural plans.

These plans are drawn up in close cooperation with the faculty's representative bodies. In light of

this, the FSCs and PCWCs will be asked to send a joint letter when submitting the faculty budget, in which they will report on their involvement in the process. This letter will be discussed in the autumn consultation between the faculty and the Executive Board. The regular training for faculty representative bodies will also cover how to get involved in drawing up plans for funds from the student loan system. The process of submitting and assessing the faculty plans forms, as far as possible, part of the regular budget process. This process is as follows:

June: The framework ('Kaderstelling'). The annual framework contains an estimate of the available resources for the coming year, including the available funds from the student loan system. Each faculty is given a financial bandwidth within which plans for funds from the student loan system can be formulated. Faculties are divided into two categories. Appendix 3 provides the starting point for an allocation ratio, partly on the basis of which the faculties are divided into these categories.

June – September: Faculties are asked to draw up their budgets based on the framework. It is customary for guidelines to accompany these requests. As from 2021 (when funds will be available for the first time for faculty plans), the framework letter will include clear instructions on

how to submit plans for funds from the student loan system.

These plans are drawn up in close cooperation with the Board of Studies ('opleidingscommissie'), FSC and PCWC. The Executive Board and the central representative bodies will encourage deans and faculty representative bodies to participate in the process. In light of this, the FSCs and PCWCs will be asked to send a joint letter when submitting the faculty budget, in which they will report on their involvement in the process. The FSCs and PCWCs have advisory powers with respect to the faculty budget (to the dean), including funds from the student loan system.

September: Faculties submit their budget to the Executive Board, including specific plans for funds from the student loan system. The FSRs and PCWCs are asked to send a joint letter, in which they will report on their involvement in the process regarding these funds. ESA checks the details of the plans for these funds against the definitions and verifies that the agreements are sufficiently and clearly linked to specific ambitions (within an overarching vision) as indicated in the NVAO protocol.

October – November: Faculty budgets, including funds from the student loan system, are discussed

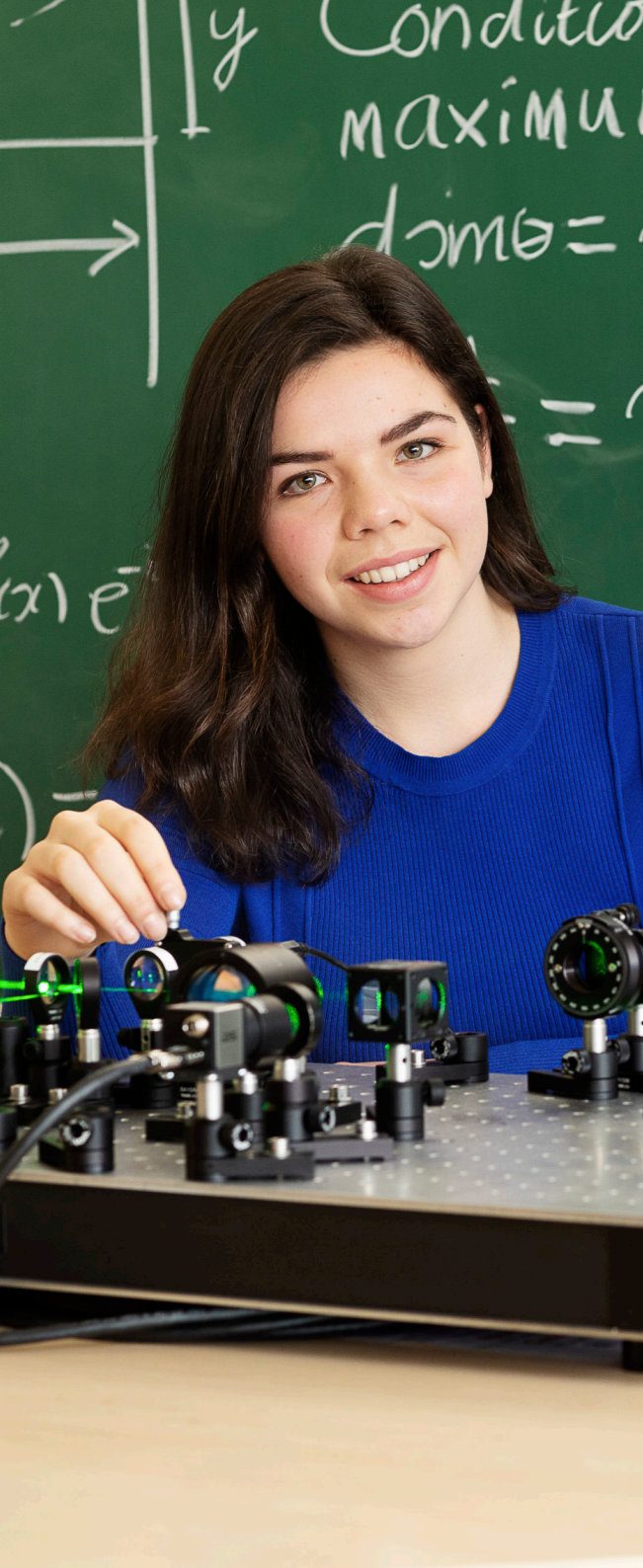
in the autumn consultations (budget meetings) between faculties and the Executive Board. These meetings include an in-depth discussion as to how the faculty representative bodies were involved in drawing up the plans for the funds from the student loan system, based on the letter submitted by the FSC and PCWC. At the same time – and in anticipation of the General Assembly of Councils later in the year – there is informal consultation between central representative bodies and the Executive Board about the total package of plans for funds from the student loan system submitted by the faculties.

November: The Executive Board reaches a provisional decision on the University budget and the proposals for funds from the student loan system. The distribution of these funds is included as a separate section in the wrap-up memorandum of the budget (to all deans; cc to the General Assembly of Councils) and in the budget memorandum. The General Assembly of Councils has the right to approve the main lines of the budget, including the funds from the student loan system⁴.

December: The TU Delft budget is approved by the Supervisory Board and adopted by the Executive Board, including the funds from the student loan system.

³ Right of approval on the budget memorandum, not on the wrap-up memorandum.

⁴ Right of approval on the budget memorandum, not on the wrap-up memorandum.



3.3 Reporting and monitoring

Formal reporting takes place via the annual report.

The 2017 Annual Report contains three sections on this subject: Section 1.2: Explanation of pre-investments and relative distribution per expenditure category; Section 5.1: Explanation of actual expenditure in relation to the 2017 budget, and Section 6.2: Explanation of funds from the student loan system in 2018 (continuation of plans, €8 million).

As far as the VSNU is concerned, 2018 has been identified as the transition year between pre-investment and quality agreements. At TU Delft, we see 2018 as a trial year in which the General Assembly of Councils has the opportunity to share their thoughts on the funds from the student loan system in the annual report.

From 2018 onwards, TU Delft will be publishing its annual report in accordance with what has been agreed within the VSNU. This will include a report on expenditures, including a section on funds from the student loan system. The accountant will issue a statement on this matter. The annual report will be accompanied by the General Assembly of Councils' reflection on the funds from the student loan system.

Perhaps even more important than a correct, formal report on the expenditures, is regular monitoring of the process: are we doing the right things? And are we doing these things properly? Since an annual cycle has been introduced as part of the quality agreements, there is scope for a systematic joint reflection on this matter. Every year, students and lecturers have the opportunity – via the investment fund – to give substance to what they think should happen. Each year, the representative bodies also actively participate in drawing up the faculty plans for the year in question and, since they have the right to approve the main lines of the budget, they have at their disposal a powerful tool to monitor this process.

The Sector Agreement distinguishes between vision, ambition and agreement. The intention to hire more lecturers, for example, is in line with the University's broader vision of guaranteeing the current intensive and small-scale (practical) teaching, even with an increasing number of students. Such intentions lead to concrete agreements, such as the 2015 agreement which allowed the Faculty of EEMCS space to hire additional lecturers (4 FTE) for inter-faculty mathematics education.

When evaluating the success of the plan once its period has expired, the following criteria are used (Sector Agreement on University Education 2018, p. 5):

1. The institution has adequately implemented its intentions for the period up to and including 2024, taking into account the efforts made and the dealing with unforeseen circumstances.
2. Representative bodies and other relevant stakeholders were sufficiently involved during the implementation of the plan.

Progress made on these criteria will therefore be central to the formal reporting, in which the relationship with the overall vision is held dear. The central representative bodies also write their own reflection on the process, which is published along with the annual report. At TU Delft we also agreed to set aside some time (halfway through the agreement implementation period) to reflect, in collaboration with the main stakeholders, on whether the approach outlined in Section 3.2 is working and where improvements can be made (if possible). To this end, we will use a thematic approach offering stakeholders the opportunity to share their experiences regarding progress of the plans and discuss how the implementation of the agreements contributes to achieving the intentions and the vision. At the same time, we will keep an eye on whether the representative bodies will be charged with an increased task load; this will be monitored over the years.

Appendices

Appendix 1: Explanation of the proposals for pre-investments in 2015, including the intended objectives and the proposed measures

As mentioned in Section 1.1, since 2015 TU Delft has been investing its own resources in order to accelerate the implementation of the activities for which the student loan funds are intended. To this end, in 2015, as part of the 2016 budget process, faculties were invited to submit proposals. Table 2 (Section 1.1) gives an overview of the proposals that were approved in this round. The following provides a detailed explanation of these proposals, including the intended objectives and the proposed measures.

A+BE, Investing in lecturer quality; Implementation of open & online education (Theme 4: Educational differentiation and Theme 6: Quality of lecturers)

It is the faculty's ambition to rank in the top five of leading degree programmes in the field of Architecture and the Built Environment. This will require world-class lecturers. The faculty is currently scoring relatively low in the National Student Survey. This will have to change. In recent years, the faculty has already invested a great deal in lecturer quality. By the end of 2015, the majority of the lecturers will be at least at the basic level (qualified) which may be expected of academic staff working at the University.

The plan envisages the following objectives, and proposes the following measures to achieve them:

1. Improve the quality of the lecturers. After completion of this project, the faculty's score for lecturer quality must be at least 3.75 in the National Student Survey (it is currently 3.48 on a scale of 1-5).
2. For each design project, the lecturers must have a clearer and more unequivocal working method in terms of design supervision. The course Design Didactics 2 is being developed in this context. 50% of the design lecturers must have taken this course by the end of 2018; 80% by the end of 2020.
3. The level of spoken English of the lecturers must be raised to a higher standard. A policy memorandum must first be prepared, indicating the standard for the faculty.
4. Ensure the quality of guest lecturers. A policy memorandum will be developed in 2015 stating the requirements for guest lecturers. At least 50% of our guest lecturers must comply with this by the end of 2018.
5. Introduce a peer review system, with each lecturer being observed at least once every two years by a peer and a didactics expert.
6. Stimulate opportunities for open and online education. In 2018, at least 30% of our lecturers must teach (components of) subjects using open and online education. The lecturers will be given the necessary training and tools to do this.

CEG, Programme intensification; More small-scale teaching (Theme 1: Programme intensity and Theme 2: More and better supervision of students)

The following objectives will be pursued by increasing the number of staff:

1. By offering intensive and more small-scale teaching in the first year of the Bachelor's degree programmes in CE and AES, students learn to study responsibly without being treated like a school child. This can be achieved by dividing large numbers of students into smaller groups for the tutorials and engineering practicals. To this end, a request has been submitted for lecturers/TTs (2.5 FTE), plus financial scope for 9 student assistants (1.5 FTE + 6 student assistants for CE, 1 FTE + 2.5 student assistants for AES).
2. The faculty would like to see a rapid improvement in the quality of education provided by developing blended education, organised at faculty level, in all BSc and MSc degree programmes and tracks. This ambition applies to all subjects offered as part of CEG degree programmes. For this purpose, lecturers/TTs (2 FTE) (main focus: online education for use in campus-based education) have been requested to lead design teams, plus financial scope for 4 student assistants in the design teams that work with lecturers to develop, maintain, and use blended forms of education. This ambition generally applies to all subjects offered as part of CEG

degree programmes.

3. One of the areas at CEG seeing a significant increase in student numbers is the interfaculty Master's degree programme in Offshore & Dredging Engineering in the Fixed Bottom Founded Structures and Arctic & Wind specialisations. An additional 2 FTE (TT/associate professor) is required for the Offshore Engineering research group in order to alleviate the current excessive teaching workload and to enable further growth.
4. The number of students studying Railway Engineering is also increasing, while this research group hardly has enough staff capacity to cope with this growth. An additional 2 FTE (TT/associate professor) is required for the Railway Engineering research group in order to be able to continue to offer Railway Engineering as a separate track as part of the CEG Master's degree programme, and thus to accommodate students seeking to choose this specialisation.
5. In the near future there will be an increase in demand for highly skilled, technically trained design engineers in the civil engineering sector. There are currently not enough CEG staff members who are experts in the technical side of integral design to meet the current and future demand for highly skilled, technically trained design engineers in civil engineering. In order to be able to accommodate more students on CEG Master's degree programme for this section,

additional staff is required for the technical side of design teaching (2 FTE in total: 1 FTE for the Construction & Infrastructure department, 1 FTE for the Hydraulic Engineering department).

EEMCS, Expansion of inter-faculty mathematics education; Investments to improve ES mathematics (Theme 1: Programme intensity, Theme 2: More and better supervision of students and Theme 3: Study Success)

In 2015, DIAM introduced a major project to improve mathematics education on other degree programmes across the whole of TU Delft. In order to accelerate this process and to introduce the initiative in other degree programmes, 4 FTE lecturers will be required on a temporary basis. In view of the limited budget allocated, we will roll out this project a little slower, limiting it to 2 FTE. The investment required to improve ES mathematics is budgeted at €410,000.

In addition, DIAM also requires additional lecturers – and funding for lecturers – for teaching mathematics subjects on other degree programmes (Education Services). This shortage of lecturers and associated funding for teaching mathematics subjects on other degree programmes (Education Services) is estimated to be 7 FTE, which translates as €450,000.

IDE, Make more time available for each individual student (Theme 1: Programme intensity and Theme 2: More and better supervision of students)

In recent years, in view of the available funds, the Faculty of IDE has been forced to provide education with fewer hours than was desirable. This was directly reflected in the Faculty's high student-staff ratio and ECTS-staff ratio. The intensity of the current degree programmes offered will increase by 15-20% (i.e. 16,000 - 22,000 hours) in order to reach the optimum originally sought. All funds allocated to the Faculty will be used to achieve this objective. In concrete terms, this means additional teaching staff (5.5 FTE) will be appointed for 2016 and beyond. The total amount of funding is €500,000 in the first year. This trend will be continued in the following years in order to eventually achieve the desired level of programme intensity.

As a result of these measures, the additional funds may have the following effects:

- Improve the quality of education. It will be possible to create smaller teaching groups and achieve a better balance between group and individual work (more individual assessments). In addition, students will get more and more detailed feedback.
- Reduce the high teaching load of current employees.

AE, Intensification of educational support; Support for students; Improving lecturers' skills (Theme 1: Programme intensity and Theme 2: More and better supervision of students)

In recent years, the Faculty of AE has had to deal with an enormous growth in student numbers with a fixed lump sum. As a result, simultaneously providing high-quality education and intensive, individual guidance in the MSc phase has come under pressure. A structural increase in the number of lecturers per department is necessary to safeguard and improve the quality of education. This additional capacity will allow for more intensive and individual guidance during the Master's phase as well as facilitate the creation of smaller groups in other parts of the teaching programme. This will improve education and intensify support. For each department, the number of academic staff will be increased by 2 FTE (total for the 4 departments = 8 FTE).

We also need additional staff to support the labs. Despite the growth in the number of students, there has been no increase in the number of technical staff. Technicians support students with practicals and research (measuring, testing, prototyping) for their graduation projects. Due to the growing number of (Master's) students, the Faculty needs more technical staff so that practicals can be offered to smaller groups of students and increasing numbers of Master's students can continue to be

supported with their research questions. As such, an additional 1 FTE is required for technical support in 2016 and thereafter.

TPM, Programme intensification; Increase lecturer capacity (Theme 1: Programme intensity and Theme 2: More and better supervision of students)

As the recent workload survey shows, workload is high at the Faculty. Increasing the quality of education (e.g. by reducing the size of groups) and reducing the workload of academic staff are key objectives of the plans.

The funds will be allocated as follows:

- a) Strengthen the ESS department (efforts to improve own curricula & contribute significant input for SET and IP) Recruitment of 1 assistant professor (tenure tracker), 1.0 FTE: cost 1 x €70,000 = €70,000
- b) Strengthen the MAS department (efforts to improve own curricula & contribute significant input for CME) Recruitment of 1 assistant professor (tenure tracker), 1.0 FTE: cost 1 x €70,000 = €70,000
- c) Strengthen the VTI department (efforts to improve own curricula & especially economics education/MoT) Recruitment of 1 assistant professor (tenure tracker), 1.0 FTE: cost 1 x €70,000 = €70,000
- d) Strengthen the Centre for Languages and Academic Skills (increased intake due to growth

at 3mE and AE, among others) Increase teaching capacity, recruit additional 1.0 FTE: cost 1 x €70,000 = €70,000

- e) Student assistants: The use of student assistants is also partly being funded from current operating costs. Proposed financing from the Bussemaker funds amounts to €20,000.

Total: €300,000

AS, Future-proofing education (Theme 1: Programme intensity, Theme 2: More and better supervision of students, Theme 3: Study Success, Theme 4: Educational differentiation, and Theme 6: Quality of lecturers)

Degree programmes offered by the Faculty of AS are predominantly small-scale. As a result, the students (including those enrolled at Leiden and Erasmus Universities) are immersed in the faculty's research environment from the start of their studies and are inspired by the research taking place there. This didactic approach is best summarised as 'Learning to Research – Researching to Learn'. Within the framework of the Study Success project, AS's degree programmes now have a higher level of intensity: teaching methods have become more active, with more direct feedback being given to the students (studio classroom concept). This educational innovation went hand in hand with a spectacular increase in the number of students

enrolled in the degree programmes. For the past two years, there has also been a sharp increase in the number of international students in MSc degree programmes. The student-staff ratio is now higher than 17:1. Naturally, the aforementioned growth and change in didactics will have implications for the workload at AS. The faculty therefore wants to use the available additional funds directly to reduce the workload within the organisation.

- 'Learning to Research – Researching to Learn' workload

In order to be able to continue the current successful formula with the larger numbers of students, it is necessary to strengthen the technical side of the practicals in the various AS departments. How funds will be used: R&D support for 'Learning to Research – Researching to Learn' – 2.0 FTE, €150,000

- Teaching design

Engineers are known for their design skills.

Students learn to design by doing, i.e. by carrying out design assignments in small groups. The nature of these assignments means that a great deal of guidance is required, with a high level of labour intensity on the part of the academic staff.

How funds will be used: Additional design lecturers – 0.2 FTE, €30,000

- Online education

AS students bring a broad range of programming skills. Course-based education is therefore difficult to organise. This makes offering programming



courses online a good solution. It is generally recommended to support lecturers when developing online teaching materials. How funds will be used: Faculty-wide online programming courses – €20,000; Support for online education – 0.8 FTE, €60,000 (the latter has not yet been awarded).

- Workload at E&SA

With 11 degree programmes, many of which are offered in collaboration with other universities and faculties, educational organisation at AS is probably the most complex at TU Delft. In order to maintain the flexibility and 'studiability' of the degree programmes and, at the same time, comply with stricter regulations (assessment policy, quality assurance), robust programme coordination is required. The increasing number of students is putting pressure on student-related support such as academic counselling, internship supervision and monitoring the final projects. How funds will be used: Additional staff for programme coordination (including supporting boards of examiners and quality assurance) – 2.8 FTE, €200,000

Additional staff for student-related services (including academic counselling, internships) – 1.2 FTE, €90,000

- Supervision of tutorials & studio classroom education

AS degree programmes make full use of studio classroom concepts: integrated lectures/tutorials. These are teaching concepts which include close student supervision (small scale), which requires a

lot of effort on the part of lecturers and assistants. Senior student assistants play a key role in this: they know the material and the curriculum from their own experience, which makes them a more than welcome addition to the support and guidance offered by PhD students. Funds not yet allocated.

3mE, Increased capacity for supervising Master's students; Reduce the burden on lecturers in the Bachelor's phase (Theme 1: Programme intensity, Theme 2: More and better supervision of students, and Theme 6: Quality of lecturers)

Objectives: The Faculty of 3mE wants to increase capacity in a responsible and sustainable way so as to provide high-quality guidance for master's students, and to reduce the burden on lecturers in the Bachelor's phase.

Based on the growth of the number of Bachelor's students and the increase in positive BSAs, 3mE expects a substantial increase in the number of students on the faculty's own Bachelor's programme progressing to the Master's phase. This, combined with the admission to the Master's programmes of students who have not obtained a Bachelor's degree within the same discipline at the University, results in a significantly increased need for academic staff to supervise Master's students and final Bachelor's projects. The large number of Bachelor's students and the intensified curriculum put a lot of pressure on lecturers. Proposed

measures using the allocated structural additional funds include: starting new lines of research/ research groups that will attract Master's students, a new student mentor system, extra lecturers for project-based teaching in mechanical engineering, extra lecturers for the Bachelor's and Master's degree programmes in maritime engineering, smaller-scale mathematics education in the second year, teaching support for young academics (so that they can also fulfil their research obligations).

General: Student workspaces (Theme 3: Study Success and Theme 5: Teaching facilities)

With the introduction of Study Success measures and new curricula, it has become more common for students not only to come to the campus for lectures, tutorials and practicals, but to spend all day studying on campus as well. Combined with the growing number of students, this has led to an increased demand for suitable student workspaces. A number of faculties have indicated that they would like to use part of the funds from the student loan system for increasing the number of student workspaces. In consultation with the CSC, we will explore where on the campus we could invest in even more or better workplaces.

General: Activities for lecturers (training, professionalisation) (Theme 6: Quality of

lecturers)

In the Strategic Agenda for Higher Education, the Minister indicated that she would invest some of the investment funds in education-related research and the digitisation of education. TU Delft is already making substantial investments in the innovation and digitisation of its education (e.g. through Study Success & the Extension School) and recently, in collaboration with Leiden University and Erasmus University Rotterdam, also in educational research (via the Centre for Education & Learning). In order to embed these investments sustainably in campus-based education, it was proposed to visibly combine these activities in an Institute of Academic Development⁵. This institute is a place where lecturers, supported by various organisations (OC Focus, Extension School) and based on latest insights from education-related research (CEL), can improve their own teaching skills. This Institute of Academic Development will be housed in the Learning Lab, which forms part of Pulse.

General: Student activities

Finally, the introduction of the Study Success measures and the student loan system have also had an effect on the study culture in Delft. A significant positive effect is the increased study pace. However, due to Study Success measures, pressure on association boards in terms of study

⁵ Currently The Teaching Academy

progress and study costs has also increased in recent years. TU Delft attaches great importance to student participation in Delft's vibrant social life. In consultation with the CSC, it was proposed to examine whether some of the funds from the student loan system could be used to make the RAS more sustainable in terms of activities that bring significant added value to the TU Delft.

Appendix 2: Explanation of the proposals for pre-investments in 2016, including the intended objectives and the proposed measures.

The Executive Board decided to invest an additional sum of €2 million a year from 2017 onwards to increase teaching capacity, in response to repeated complaints from teaching staff about the high workload. This issue was also raised by the representative bodies. Prior to the final allocation of these funds, a workload analysis was carried out which showed that the Faculty of 3mE had the highest relative workload. On this basis, an additional amount of €1.5 million was allocated to the Faculty of 3mE. The remaining €0.5 million was allocated to the Faculty of EEMCS, due to the provision of TU-wide mathematics education in combination with the increasing number of students. Further details of both plans are provided below.

3mE

The Faculty of 3mE wants to increase capacity in a responsible and sustainable way so as to provide high-quality guidance for master's students, and to reduce the burden on lecturers in both phases. In order to achieve these goals, the faculty is building on the previously agreed plan, on the understanding that new developments will require some adjustment. The additional budget of €1.5 million from 2017 onwards will be used for this purpose. One of these developments is that, due to the growth of the faculty, one of the departments is starting to become very large indeed. This means that the creation of a new Intelligent Autonomous Systems department is being considered, the timing of which would be most auspicious. The staffing of this new department will have far-reaching consequences for the Delft Centre for Systems and Control (DCSC), because employees will be transferred to the new department. Given the increasing popularity of the Master's degree programme in Systems and Control, the DCSC department will be strengthened by appointing new academic staff who will be recruited using the additional resources.

EEMCS

EEMCS is experiencing a significant increase in workload, particularly in mathematics education, which is putting pressure on mathematics research. There are three reasons for this.

1. The number of first-year Bachelor's students

following programmes with a large mathematics component increased again in 2016, and the larger 2015 cohort is now following second-year mathematics modules. Funding is lagging behind this development and fails to adequately cover the costs.

2. The number of students starting mathematics (Bachelor's degree in AM) at EEMCS has increased significantly. There are now 190 students, of whom a large proportion (about 40) are taking a double Bachelor's degree in combination with Applied Physics. This is good news: society needs these graduates and, above all, students who have a double Bachelor's degree are of a high standard. At the same time, students on the Mathematics Bachelor's degree programme are receiving close supervision, and the large cohorts of mathematics students – now that the increase in the number of mathematics students has been going on for some years – are entering the phase where guidance becomes even more intensive, such as during the final Bachelor's projects.

3. The innovation project in the Bachelor's degree programme in Mathematics (blended education) is entering its second year of implementation and has doubled in size (i.e. twice as many subjects). The approach has also undergone a number of improvements. This improvement and doubling requires additional teaching capacity.

For the above-mentioned reasons, four additional assistant professors will be required for mathematics education. Assistant professors are used to correct the imbalance with the research.

EEMCS is also seeing a significant increase in Bachelor's students in the Computer Science and Engineering ('Technische Informatica') degree programme. There is also an increasing demand for programming courses in other degree programmes, with students from various programmes taking Master's courses from the Computer Science degree programme. As such, three additional assistant professors in computer science are required, in addition to organic growth.

Appendix 3: Basis for the allocation ratio

In the annual framework, each faculty is given a financial bandwidth within which plans for funds from the student loan system can be formulated. There are two categories. Table 5 provides the starting point for an allocation ratio, partly on the basis of which the faculties are divided into these categories. This is a policy-rich choice which, in addition to the allocation ratio, also affords room to consider other relevant factors such as work pressure (which can also be substantiated with figures on the student-staff ratio) and previously promised investments.

2017	A+BE	CEG	EEMCS	3mE	IDE	AS	AE	TPM	Total
Students per faculty*	2771	3605	3338	4744	1896	2985	2611	1511	23461
ECTS per faculty**	119441	111038	157751	141014	78922	74828	83314	81801	848109
Share of students (1)	12.0%	15.0%	14.2%	20.0%	8.0%	13.0%	11.0%	6.0%	100.0%
Share of ECTS (2)	14.0%	13.0%	18.6%	17.0%	9.0%	9.0%	10.0%	10.0%	100.0%
Average share (3)	13.0%	14.0%	16.4%	18.0%	9.0%	11.0%	10.0%	8.0%	100.0%
Distribution of resources 2021(x 1.000 euro)									
Key 1	272	353	327	465	186	293	256	148	2300
Key 2	324	301	427	382	214	203	226	222	2300
Key 3	298	327	377	424	200	248	241	185	2300

* From TUD website Facts & Figures - student numbers

** 2016/2017 from the 2019 final framework

Table 5: The basis for an annual allocation ratio for allocating funds from the student loan system to faculties

The allocation ratio must be simple, unambiguous to define, not subject to fluctuation and linked to student grades. Obvious indicators which can be used are therefore student numbers and ECTS points. Table 5 shows an example for 2017, whereby the allocation ratio has been calculated on the basis of these individual indicators (1 and 2)

and on the basis of an average of these factors (3). In 2017, the faculties were split into the following categories: Category 1: A+BE, CEG, EEMCS, 3mE. Category 2: IDE, AS, AE, TPM. This is just an example. The ratio is reviewed annually to see whether it needs to be adjusted, for example based on the three-year averages.

Appendix 4: Definitions of the themes⁶

More intensive and small-scale teaching (programme intensity)

A good relationship between lecturers and students is crucial for high-quality education. That is why it is important to further intensify contacts between students and lecturers. This can be done, for example, by focusing on smaller teaching groups and community building, and by freeing up more time for personal feedback and individual guidance. In order to achieve this, further increase of the number of lecturers per student is necessary. Appointing more lecturers also makes it possible to link the curricula to social themes and research, which increases students' curiosity and their research skills.

More and better supervision of students

Universities and universities of applied sciences are responsible for providing equal opportunities to all students, regardless of background, origin and previous education. Not just occasionally, when things are about to go wrong, but also proactively and consistently. To this end, potential measures include close guidance and support from, for example, professionally trained tutors, academic counsellors, student psychologists, student

counsellors and student career advisors. Better guidance prevents problems and ensures that all students are able to achieve their full potential.

Study success

All students with the right capacities should be given the opportunity to successfully start and complete their studies. It is important to monitor the mobility and accessibility of education for students from secondary education (vo and mbo levels), equal opportunities, including higher education, and to reduce drop-out rates and drive study success. Based on an analysis of the student population's study success, an institution may decide to focus its attention primarily on certain groups of students and/or degree programmes and formulate objectives for this purpose.

Educational differentiation

Universities and universities of applied sciences respond to the different backgrounds and ambitions of students and the needs of the labour market. They do this by offering a varied range of degree programmes (Ad, Ba, Ma). They also invest in talent programmes, such as honours programmes or programmes in the field of, for example, social involvement, entrepreneurship, fine arts or sport. In addition, universities and universities of

⁶ From the Sector Agreement on University Education 2018, Amsterdam, 9 April 2018.



applied sciences can also use a range of teaching concepts.

Suitable and high-quality teaching facilities

It is important that the study facilities and infrastructure promote intensive and small-scale teaching. Digital resources can be integrated into the teaching process more effectively: students should be able to make optimal use of the educational environment, both physically and digitally, throughout their studies. The study facilities and infrastructure must meet future education requirements.

Further professional development for lecturers (quality of lecturers)

Good and committed lecturers are the key to high-quality education. There is scope for further developing the professional skills of lecturers. This includes greater appreciation for the work they do, for example, by focusing more on teaching achievements. Lecturers should also be able to keep abreast of the latest substantive, didactic and digital developments. To this end, it is useful to be able to share one's own teaching material and to use that of others. Lecturers should be given more opportunities to develop themselves, for example, by doing research themselves.

Appendix 5: Glossary of terms

CSC	Central Student Council
CWC	Central Works Council
FSC	Faculty Student Council
GAC	General Assembly of Councils, i.e. the Central Student Council and the Central Works Council
OCW	Ministry of Education, Culture and Science
PCWC	Personnel Committees (at the faculties and service departments) of the Works Council
VSNU	Association of Universities in the Netherlands
Board of Studies	Opleidingscommissies (aan de faculteiten)
Funds from the student loan system	Studievoorschotmiddelen
Pre-investments	Voorinvesteringen
Quality agreements	Kwaliteitsafspraken
Sector Agreement on University Education	Sectorakkoord wetenschappelijk onderwijs
Student Loans (Higher Education) Act	Wet Studievoorschot
Student loan system	Leenstelsel

