

# Erasmus Policy Statement (EPS)

2021-2027

In the autumn of 2017, TU Delft set out its vision and ambitions regarding education at TU Delft in the TU Delft Strategic Framework 2018 – 2024 and the TU Delft Vision on Education (November 2017). “Impact for a better society’ is the motto that will guide TU Delft in the coming years. As educating the next generation of responsible top-level engineers is the biggest impact that TU Delft has on society, a major objective of TU Delft is to continue to strive for education that is internationally acknowledged as world-class and above all aligned with the professional challenges our students will face in the future. We develop and enhance the knowledge and talent of tomorrow’s leaders in science, engineering and design. Our university strives to equip future engineers with the intellectual tools to develop responsible engineering solutions for complex societal problems in a rapidly changing multi-actor context. Tomorrow’s engineers should be prepared for leadership in highly complex techno-societal systems, recognising that the demands of these roles will be continually evolving. The features of our education:

- 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 in 21st century skills such as communication, ethics, critical thinking and digital literacy
- 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 and interdisciplinary tasks
- we provide students with solid grounding also in sustainability and entrepreneurial thinking
- we familiarise students with the context of their future professional practice
- we prepare students for lifelong learning as well as offer opportunities for lifelong learning after graduation

All graduates of TU Delft are therefore expected to master the following core competences for engineers:

- 1) critical thinking and reflection;
- 2) carrying out research;
- 3) designing;
- 4) applying an academic approach;
- 5) communicating and collaborating in a complex inter/multidisciplinary and intercultural environment;
- 6) taking into account the temporal and social context of technological solutions.

Since 1987 TU Delft has been an active member within the Erasmus community. The philosophy of the Erasmus program is therefore fully embedded within our university. It is part of our DNA. The current playing field for research, education and innovation is globally interconnected and diverse. With knowledge spreading more easily, opportunities to make an impact for a better society are widespread. TU Delft acknowledges it is part of that global community in which, through

partnerships, we explicitly contribute to global inclusive societies. We empower students to develop global citizenship and intercultural understanding among other things. The partnerships realised by the Erasmus program have proven to be an effective instrument to accomplish these underlying goals. Our Erasmus policy is embedded in our Global Engagement Framework in which we have set out the following objectives of our internationalisation strategy in education:

1. We strive for a balanced and inclusive international student community by:
  - a. Designing an admission policy which guarantees accessibility for domestic students, ensures a balance of suitable students from diverse international backgrounds, but above all attracts students who are the best fit for our educational programmes.
  - b. Offering several scholarship programmes specifically designed to offer talented and motivated international students the opportunity to pursue a degree at TU Delft.
  - c. Providing a campus, study and student climate in which students feel welcome, are supported in their development and well-being and are able to fully unlock their potential.
  - d. Offering student support services that are tailored to the needs of a diverse group of students such as the master on boarding programmes, academic counselling and workshops focused on intercultural and self-awareness, study skills, teamwork and managing your career.
2. We aim to improve, strengthen and enrich the international orientation of our Bachelor and Master curricula through creating opportunities for students to personalise their graduation profile and pursue their own interests by:
  - a. Offering a structured approach to worldwide student mobility in all our curricula and overseas experiences to enrich students' educational careers and improve their international orientation.
  - b. Offering English-taught minors in our Bachelor programmes.
  - c. Offering a diverse set of other (international) experiences such as student competition projects (e.g. DreamTeams), Athens, credit rewarded virtual mobility through open and online education and internships.
  - d. Aligning all our efforts to accommodate current numbers of international experience within our growing student population.
  - e. Offering joint educational programmes only with our established academic partners to enrich student's experience.
3. We continue to offer experiences and the development of skills to ensure students' future adaptability and success by:
  - a. Working on challenge-based assignments in global teams of students and staff in Delft and around the world.
  - b. Engaging alumni and their professional work environment for internship, traineeships and content-related student support for thesis and project work as well as talent acquisition.
  - c. Offering Honours programmes designed to stimulate talented and ambitious students by further deepening and broadening their knowledge and skills with particular attention for cognitive abilities as well as exploring how these programmes can foster students ability to solve complex societal issues with authentic empathy. We continue and build world-class academic education partnerships worldwide with a strong focus on Europe for sharing innovative practices, student mobility, joint open and online education opportunities.
  - d. Collaborating with a selection of high standing academic partners in the field of lifelong learning, online education, technology enhanced learning, open educational resources, (virtual) student mobility and joint educational programmes. These partnerships will enable our students to develop instrumental values such as global citizenship, intercultural understanding, diversity in contexts and integration through interaction with peers in student exchange programmes and joint innovation projects. Participating in the Erasmus+ programme is essential to foster these partnerships and to offer these possibilities to our students. It may even act as a catalyst for Horizon Europe proposals.

- e. Being an active member of the ATHENS, CDIO, CESAER, edX, OEGlobal, SEFI, SURF, EUA, Global E3, IDEA LEAGUE and LDE, 4TU and VSNU networks.
4. We ensure the quality of our international experiences by:
  - a. Providing guidelines for our partnerships from exchange to joint educational programmes. This is based on gaining a comprehensive understanding of the compatibility of our partners' academic profiles (level / standards considered adequate for mobility activities), a relationship of trust, and the viability of the activities required to ensure automatic recognition of credits.
  - b. Monitoring with more relevant management data our progress in mobility.
  - c. Continuing to review our joint education through an established assessment committee, which focuses on the viability and sustainability of the partnership as well as the quality of the partners.
  - d. Lowering the administrative hurdles for mobility.
5. We encourage and support alumni, students and staff members to get the best out of themselves and we further develop service provision and campus facilities that enable us to make a difference in Global Engagement practices at home and overseas.
6. We create direct links both with an increasingly more international professional environment and with our worldwide alumni network to open up opportunities in the job market for internships and traineeships for our young and talented engineers. Their world vision and training encourage our graduates and equip them to contribute to solving the world's current and future challenges.
7. We create and encourage participation in professional and research staff opportunities through mobility schemes, scholarship and fellowship programmes, visiting professorships, guest lecturers, honorary professorships and short research stays.
8. We increase our impact on education worldwide by:
  - a. Offering on campus Bachelor and Master engineering programmes that prepare for a global work environment.
  - b. Creating a relevant online educational portfolio for working professionals and lifelong learners in a global environment.
  - c. Organising TU Delft theme-based Summer and Winter Schools for the wider public making use of blended and online learning.
  - d. Remaining one of the leading universities in the international field of Open & Online Education by collaborating with frontrunners in innovative education.
  - e. Developing an open and online portfolio focused on contributing solutions to the grand challenges as described in the UN Sustainable Development Goals (SDG)
  - f. Strengthening the ties with our alumni by developing a solid alumni policy to create a community for life. A community consisting of more than 100,000 members: students, employees and alumni. We believe in lifelong learning and offer our alumni 25% discount on our online professional courses. We also provide them a lifelong library pass for free.
9. We enable and train a TU Delft community ready to embrace each other's and communal cultural values by:
  - a. Ensuring that all official communication and documentation are available in both Dutch and English.
  - b. Offering Dutch language and culture programmes as well as services for staying in the Netherlands to students, alumni, staff and their families.
  - c. Providing English for Specific Purposes language programmes, as well as training in intercultural communication for both staff and students to enhance further integration.

**Please reflect on the Erasmus actions you would like to take part in and explain how they will be implemented in practice at your institution. Please explain how your institution's participation in these actions will contribute to achieving the objectives of your institutional strategy.**

TU Delft wants to continue its participation in KA1 and KA2 E+ actions for the period 2021-2027 as this contributes to the following objectives of its strategy:

- Further increase our societal impact on education by providing our knowledge on curriculum development, innovation and digital skills in education and online education to the world, and learning from other successful experiences. Through this we expect to make a significant contribution to the solution of societal challenges by combining science, technology and design in a responsible manner. Currently, we participate in the European Maturity Model for Blended Education project (EMBED 2017-2020) within the strategic partnership KA2 Cooperation for innovation and the exchange of good practices. The project aims to create a reference model for developing and implementing blended learning, embracing all levels of an institution: the design of the blended course; organizational aspects such as staff support, training and institutional leadership; developing policies and strategies, making the institution continuously innovative. We expect to start a follow-up of this project under E+ 2021-2027.
- Foster a culture of innovation and experimentation in teaching and learning and accentuate the relationship between engineering and society, for example through a blend of educational formats, including online and on-campus education, and the integrated teaching of 21st century skills (such as communication, ethics, critical thinking and digital literacy), which well prepares students for success in a rapidly changing digital society and also involves thematic studies across disciplines in the curricula. Currently, we are creating some promising educational innovations: online student guidance via feedback during practical's, the enhancement of student interaction through a gamified knowledge-sharing platform, and the use/introduction of modules to improve digital skills using a 'cafeteria model'. We are starting to work on solutions to reduce work pressure for academic staff and measures to improve student success via a smarter approach to our education. All programmes have a desire to improve the student learning experience (resulting in a more self-regulated student and a higher success rate), while optimizing the contact between student and academic staff (increasing education effectiveness and reducing staff workload for the same student population). There is a need to provide real-time insights to students, develop more engaging learning materials, ensure that students are challenged to study independently, and make more effective and proactive use of contact hours with staff and teaching assistants. By supporting the scientific staff in their education, and the newly attracted academic and teaching staff with dedicated onboarding, we promote a working climate with a healthy science-education balance. We are ready to share and improve our knowledge by participating in future KA2 projects.
- Increase our investments in lifelong learning, offering a relevant online portfolio for both working professionals and lifelong learners worldwide, and supporting closer cooperation with alumni and the professional field, further strengthening the sense of community among existing staff, students and alumni. Given recent national focus on lifelong learning, TUD is involved in the development and creation of a national education catalogue (learning opportunities for lifelong learners) and active in learning communities (sharing of best practices with other institutes of higher education).
- Make Open Education part of TU Delft's education policy to support teachers in adopting and adapting teaching and learning methods through open education. To keep education accessible and affordable for students. Build on current practices such as Open Courseware and MOOCs. Support includes training, advice, tools and infrastructures, for instance for sharing and reusing teaching materials.
- Be an accessible university that is open to caliber students who can handle our studies. In this, diversity and inclusion are indispensable and we strive to be attractive to new students who are as diverse as possible with respect to gender, cultural and ethnic background, nationality and age. We strive for a valuable diversity of students and a good balance between Dutch and international students.
- Prepare students to contribute to solving societal challenges by providing a solid grounding in interdisciplinary skills, sustainability and entrepreneurial thinking. To this end we will increase

the elective space in Master programmes and enable students to work together with students from different faculties and international partners (mixed classroom).

- Enable a 'student experience' with room for personal and professional development. To this end we support students in developing their soft skills and encourage them to go abroad and gain international experience, as this will greatly enhance a vast range of interpersonal skills that are important in the job market. Next to this as an inclusive university we also offer virtual exchange (leading member of the Global and European Virtual exchange alliance of 11 European and global renowned member institutes of higher education) through which all our students can broaden and enrich their knowledge and educational portfolio, and earn credits without travelling. Key condition for all outgoing and incoming mobility is that students remain on track, and should not fall behind during their time abroad.
- Promote virtual student mobility as a sustainable (pandemic proof) option.
- Continue to organize TU Delft theme-based Summer and Winter Schools for students and the wider public, making use of blended and online learning, IDEA League doctoral schools, and intensive short courses for students of the ATHENS network and Institute for Water Education.
- Continue to encourage entrepreneurship and promote the translation of our research findings into innovative, commercial activities by increasing entrepreneurial skills among students. We achieve this through DreamTeams and Master education in entrepreneurship, by strengthening the linkages with economic activities in the region, and further developing the/our science park Technopolis into an attractive location for prominent industrial partners whose expertise is closely linked to the scientific research at TU Delft. For example Airbus has an office in our Aerospace Innovation Hub, the new incubator where start-ups, students, industry and researchers work together on radical innovations; and Royal Haskoning DHV will relocate two main offices to our campus, strongly contributing to making it one of the leading locations for R&D in Europe.
- Increase the mobility of incoming and outgoing staff and lecturers in order to improve their professional development, and enrich our curricula, while continuing our HR strategy aimed at recruiting more female talent and acknowledging the importance of education in the career of academics.
- Further expand and maintain international (strategic) collaborations in the areas of education, research, and training, with relevant private and governmental organisations, in order to position TU Delft as a leading global university. Currently we are involved in several KA2 Knowledge Alliances such as the EASIER, WindEXT, A4SEE, PREFER, IMPACT and IoT Rapid-Proto Labs projects and we are a partner in the recently (February 2020) submitted Knowledge Alliance application for the ETERNAL project. We also participate(d) in various E+ strategic partnerships for higher education e.g. PEP-UP specific for PhD to better prepare them for a job in industry.
- Continue our participation in the IDEA League, an important strategic European network for leading technical universities and work together on proposals for Erasmus+ action KA2.;
- Make mobility easier through better transfer and recognition of credits via use of blockchain (member of the Digital Credentials Consortium that comprises 12 renowned member institutes of higher education) that are building a digital credential infrastructure for the future of education.

TU Delft invests in strategic cooperation at the European, global, regional and sectoral levels. This cooperation is established at three different levels of scale: individual peer-to-peer collaboration, cooperation between academic departments and/or faculties, and cooperation at the administrative level. Potential projects are carefully assessed for factors such as the programme's added value for the education and research portfolio, demonstrable effects on education quality and innovation, organisational and practical feasibility, the administrative and financial support required, potential risks and the presence of a valorisation plan that sets out how the results are to be disseminated and implemented. Project partners are assessed for quality, based on the premise that TU Delft can benefit and learn by associating itself with partners who are ranked among the worldwide top in

their field. The potential partners' capacity to raise external funding for research is also taken into account. This approach ensures that the number of projects is kept manageable, while assuring quality. We use the principles of the Plan Do Check Act cycle with project implementation and we respect the E+ ECHE principles. Projects are evaluated after three years and the participation of staff members is part of their professional development.

TU Delft's strategy focuses among other things on the following themes: innovative curricula, open, online and blended education, ICT - new technologies - digital competencies, learning analytics, lifelong learning, skills, entrepreneurship education, ethics, resilience engineering, Innovation, Sustainability, Sustainable Cities, Circular Economy, Sustainable Energy Technology, Synthetic Cell, Water, ICT, Artificial Intelligence, Data & Digitalisation, Quantum Computing, Climate, Medical Technology, Safety & Security, Sports Engineering, Sustainable Aviation. We expect to participate in Erasmus+ strategic and innovations partnerships on these topics.

From a geographical perspective, the collaborations with partner universities are global in nature, with a strong focus on Europe. TU Delft wants to continue our cooperation in the IDEA League, an important European network for leading technical universities. Important partner countries for (research) cooperation outside Europe are China, India and Brazil. We are also active in Sub-Saharan Africa and South-East Asia via the TU Delft Global Initiative, the cooperation platform between our TU Delft scientists and partners in developing countries to jointly find concrete solutions to global societal challenges.

### **What is the envisaged impact of your participation in the Erasmus+ Programme on your institution?**

**Please reflect on targets, as well as qualitative and quantitative indicators in monitoring this impact (such as mobility targets for student/staff mobility, quality of the implementation, support for participants on mobility, increased involvement in cooperation projects (under the KA2 action), sustainability/long-term impact of projects etc.) You are encouraged to offer an indicative timeline for achieving the targets related to the Erasmus+ actions.**

Participation in the Erasmus programme has a large impact on students, teaching staff and TU Delft overall:

- The intake of incoming exchange students and staff is important in creating an international teaching and learning environment. A significant trend in recent years is our steadily growing student population, from 17,000 students in 2010 to around 25,000 students in 2020. This growth is in itself a positive sign: society has a great need for our graduates. But it also has negative consequences, because at the same time our (financial) resources decrease. Maintaining the high quality of our education has therefore become a major challenge. We intend to better control the growth over the coming years and to strive for a valuable diversity of students and a good balance between Dutch and international students. Therefore, our target for Erasmus+ student mobility is to keep the numbers on the level of 2020 (around 400 incoming and outgoing study exchange students, 160-180 outgoing internship students and 75 incoming internship students). A slight growth is acceptable as long as there is a balance between incoming and outgoing mobility.
- For all outgoing and incoming mobility, students must remain on track, and should not fall behind during their time abroad. We will closely monitor the study results.
- We want to increase the mobility of incoming and outgoing staff and lecturers, including PhD candidates, by at least 10% compared to the level of 2018-2019 (around 100 outbound mobilities

and 76 inbound mobilities), with the aim to share, learn, grow, innovate and improve professional development, and enrich our curricula and establish valuable contacts.

- Students and staff going abroad are ambassadors of TU Delft generating a great amount of exposure and visibility all over the globe.
- We want to build a stronger engagement with our worldwide alumni and intensify the collaboration with industrial partners, and create more participation opportunities for engineering practitioners in the classroom as this will open up the opportunities in the job market for engineering projects and internships at companies.
- We want to further strengthen partnership management (setting up of inter-institutional agreements; information, communication, selection, update of the course catalogue; preparation of learning and grant agreements with participants; academic recognition, preparation, monitoring and support relating to participants) and aim to improve the quality by digitising and streamlining student and staff mobility administration processes via the online tool: Mobility Online.
- We will closely monitor the experiences of incoming and outgoing participants and take appropriate action when feedback indicates problems. Currently 98% of TU Delft's students and staff are very satisfied or rather satisfied with the overall Erasmus+ experience. For inbound the percentages are: 94% for study students and 96% for staff.
- We have been developing innovative open and online education since 2013 and the MIT's 2018 report *Global state of the art in engineering education* recognizes TU Delft as front-runner and thought-leader in online education. Through participation in Erasmus+ KA2 projects in the field of online education, we will share our knowledge and high-quality affordable education with the entire world and in this way include those facing disadvantages, or having special needs. Specifically, we intend to strengthen our thematic online education and develop a relevant portfolio for both working professionals and lifelong learners worldwide, through partnerships with other universities and providers. We want to stimulate and share the application of evidence-based innovations in university education by participating in Erasmus+ KA2 cooperation projects, for example a blend of online and on-campus education.
- Through our participation in Erasmus+ Knowledge Alliance in the field of skills and employability we are also aiming to improve the employability of engineering graduates by working closely with industry and professional organizations to ensure the graduate finds the right job after graduation and has the non-technical skills in place to get off to a good start in their engineering career.
- We will take up Green Erasmus to become a more sustainable society by:
  - Offering courses and full educational programmes that provide the necessary knowledge and skills. Think of specific projects such as the recycling of waste at the Food lab pilot of Architecture.
  - Having the ambition to realise a CO2 neutral and circular campus in 2030.
  - Offering an entrepreneurial ecosystem (such as Yes!Delft/Delft Enterprises) to develop a student start up with sustainable focus.
  - Increasing the opportunities for credit-rewarded virtual mobility through open and online education, by offering more courses.
  - Support student initiatives such as Circular Delft, Delft sustainable energy association or Students4Sustainability
  - Making smart mobility choices to reduce emissions such as travelling short distances (< 700 km) by train, as well as via a TU Delft pilot scheme whereby employees and students are encouraged to travel by bike or to test an e-bike for free for a set period.
- And to focus on solving societal challenges:
  - Through our research, which for example is focused on the Sustainable Development Goals of the United Nations;
  - By developing the campus as a multi partner 'Living Lab' showcasing technical innovation.

