Water plays a major role in delta regions like the Netherlands, where rivers and the sea pose a constant threat and provide enormous benefit. The Netherlands developed into a prosperous trading nation because of its large rivers and easy accessibility to the North Sea. Water is also related to societal problems all over the world, arising from climate fluctuations, subsidence, demographic developments, economic growth, urbanisation and social political contexts. The hydraulic engineers of tomorrow will develop innovative solutions to address future water demands for cities, plan river and coastal flood control projects and meet other water-related challenges.

Programme
The MSc in Hydraulic Engineering teaches students to exploit the opportunities of water and develop protective strategies against it. Students resolve water-related research problems to contribute to the wellbeing of people living, working, and recreating in deltaic areas. Students tackle complex problems and apply developed technologies practically within fluid mechanics and other basic disciplines. The emphasis is on the use and development of computer models, laboratory experiments, and field measurements. Hydraulic constructions, such as sluices, dams, barrages and storm surge barriers are studied and designed. Challenges are met actively with research, physical and numerical modelling, and through gaining experience in evaluating the performance of hydro-power plants.

Rise to the challenge

<table>
<thead>
<tr>
<th>Diploma</th>
<th>Master of Science Civil Engineering Track: Hydraulic Engineering</th>
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<tr>
<td>Credits</td>
<td>120 ECTS, 24 months</td>
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<td>Starts in</td>
<td>September</td>
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<tr>
<td>Language of instruction</td>
<td>English</td>
</tr>
<tr>
<td>% International students</td>
<td>25-30%</td>
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Hydraulic Engineering
When I finished my BSc in Civil Engineering at TU Delft, the choice to continue my studies in the MSc program of Hydraulic Engineering at TU Delft was not that difficult. I always loved the courses concerning fluid mechanics and its applications. Also, the Dutch expertise on the subject of hydraulic engineering and its worldwide importance provided an extra incentive. TU Delft offers the chance to benefit from a world-class faculty with diverse areas of expertise. It also provides endless possibilities to broaden my view and experience within the field. Hydraulic Engineering is concerned with the various ways in which we can protect ourselves against the dangers of water and the opportunities that water offers us. Within this program, you learn to tackle complex problems within fluid mechanics and other base disciplines and to apply developed technologies in practice.

Elisabeth Kasteel,  
Master’s student Hydraulic Engineering (The Netherlands)
Examples of graduation projects
Jor Smulders (Ports and Waterways)
- Dynamic Assessment of the Bolivar Roads Navigational Barge Gate Barrier
Sharon van Geffen (Environmental Fluid Mechanics)
Marcel Mol (Coastal Engineering)
- The Effective Transport Difference: A New Concept for Morphodynamic Model Validation
Robert de Boer (Flood Risk)
- Building-with-Nature Solutions for Hurricane Flood Risk Reduction in Galveston Bay, Texas: Conceptual Design Study
Camille Habets (Hydraulic Structures)
- Performance-Based Seismic Analysis of an Anchored Sheet Pile Quay Wall

Career prospects
As a hydraulic engineer you’ll find employment opportunities in non-profit organisations such as ministeries and water boards, and in profit organisations like Deltares, Arcadis, Fugro, DHVm Grontmij Royal Haskoning, Witteveen + Bos and Lievense. Furthermore many will work at companies as Shell, BAM, Boskalis, Van Oord, Heerema, Allseas, IHC and the Port of Rotterdam Authority. The relation between these highly respected companies worldwide and our department at the Delft University of Technology is fairly intensive. You will benefit from it, during the track Hydraulic Engineering and after graduating.

A student who chooses the master in Hydraulic Engineering will become a versatile specialist. Someone who is uniquely able to provide technically and scientifically sound solutions, respecting both people and the planet. We offer a course programme built on fundamentals of physics and scientific progress. It is designed to meet the needs of modern society. Our strong link with contractors, consultants, research institutes and governmental bodies provides opportunities for students to obtain practical experience and get acquainted with realistic projects. This is a vital element in our educational programme. It also helps students to explore what their future role in the field of hydraulic engineering might be. Actually, our entire programme is about learning and discovering. That remains throughout your career: no two projects are the same. Hydraulic engineers are challenged continuously by nature as well as by changing societal and cultural demands to exhaust and shift technological boundaries. Choosing Hydraulic Engineering in Delft is choosing for one of the world’s leading MSc programmes in this field.
Admission requirements and application procedures

Dutch BSc degree
If you hold a Dutch BSc degree closely related to the Master’s programme, you will be admitted directly. However, if your undergraduate programme is not closely related to the Master’s programme you will be required to take additional courses in what is called a bridging programme. This may be a standard programme or it may be tailored to your specific situation.

To see which Master’s programmes are open to you on completion of your Bachelor’s degree at a Dutch university, go to www.doorstroommatrix.nl.

Applications through Studielink: www.tudelft.studielink.nl.

Dutch HBO degree
An HBO Bachelor’s degree does not qualify you for direct admission to a TU Delft Master’s programme. You will first need to complete a supplementary programme in order to bring your knowledge to the required level. You can do this during your HBO programme by completing a bridging minor, or by means of a bridging programme after completing your HBO diploma.

Entrance requirements for Mathematics and English (some exceptions) apply to both the bridging minor and the bridging programme.

See www.hbodoorstroom.tudelft.nl for detailed information.

Applications through Studielink: www.tudelft.studielink.nl.

International applicants
To be considered for admission to an MSc programme you will need to meet TU Delft’s general admission requirements.

1. A University Bachelor’s degree (or proof that you have nearly completed a Bachelor’s programme) in a main subject closely related to the MSc programme to which you are applying, with good grades for the key courses.
2. A BSc Cumulative Grade Point Average (CGPA) of at least 75% of the scale maximum.
   • A TOEFL (Test of English as a Foreign Language) with an overall Band score of at least 90 and a minimum score of 21 for each section. Please note that we only accept the TOEFL internet-based test.
   • or an IELTS (academic version) with an overall Band score of at least 6.5 and a minimum of 6.0 for each section.
   • or proof that you have passed the University of Cambridge ‘Certificate of Proficiency in English’ or the University of Cambridge ‘Certificate in Advanced English’ with a minimum grade B.
4. Two reference letters in English (not applicable to students from partner universities):
   • one letter from a professor or an assistant professor from the faculty from which you graduated, and
   • one letter from your employer, if you already have work experience.

For international students, the application period starts on 1 October and closes on 1 April. To start an MSc application, please complete the online application and pay the refundable application fee of €100. You will then receive an email with a link to upload the required documents.

For more information about the application procedure and studying at TU Delft in general, go to www.admissions.tudelft.nl.

Introduction week
All international students will be welcomed with the award-winning introduction programme. The introduction consists of a variety of workshops and projects, during which you will get to know other international students, visit the highlights of Delft and learn the ins and outs of the TU Delft campus. After this interesting and fun week, you will be introduced to the CEG faculty. You will receive helpful information about the Dutch education system and meet the fellow students from your programme in a variety of social and educational activities.

For further information
Please visit the webpage for all details, complete requirements, deadlines and contact information: www.cive.msc.tudelft.nl

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