Make the world round and round

<table>
<thead>
<tr>
<th>Diploma</th>
<th>Master of Science Civil Engineering</th>
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<tbody>
<tr>
<td>Credits</td>
<td>120 ECTS, 24 months</td>
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<tr>
<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>37%</td>
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Wherever you go in the world, you will find the work of civil engineers: the roads that you travel on, the building you live in, and the dikes that hold back floodwaters and keep the country dry. At the end of the day, civil engineering is all about people. It’s the work that civil engineers do to develop and improve the services and facilities we – the public – use every day. They are the ones that creatively solve complex problems in the field of planning, designing, building and managing the infrastructure of modern societies. Civil engineers are challenged to develop proposals for workable transportation systems, or to design more efficient coastal defences for cities like New Orleans. There is no doubt: without them the world we live in would be completely unrecognisable.

Programme
The MSc Civil Engineering programme at TU Delft is the oldest Civil Engineering course in the Netherlands. The course has traditionally emphasised the interaction between theory and practice and between research and education, enabling students and researchers to enjoy excellent and extensive laboratory, ICT and library facilities. In Delft we train and educate engineers to provide sustainable solutions to the complex problems facing modern society. Graduates from TU Delft are knowledgeable as well as scientifically and technologically resourceful. They are able to work professionally in complex and unpredictable environments and to assume leading roles in these organisations, both in the Netherlands and worldwide.
The programme offers eight tracks:

**Hydraulic Engineering** focuses primarily on the protection of land against flooding and the use of water for the benefit of mankind. Students learn how to apply basic sciences to hydraulic engineering challenges and to design hydraulic structures.

**Building Engineering** covers the full range of issues you have to deal with as a building engineer: (structural) design considerations, actual design, construction, management and maintenance, energy management, renovation and even demolition and recycling.

**Structural Engineering** covers the use of mechanics and materials science in the design and construction of structures in both ‘dry’ and ‘wet’ sectors of civil engineering, providing the sustainable solutions the world needs today.

**Transport & Planning** addresses the everyday problems of moving people and goods from one place to another, and mitigating such problems of modern transportation systems as traffic congestion, road accidents and environmental pollution.

**Water Management** is concerned with understanding surface water flows and groundwater flows in nature, and with regulating these flows. Water managers are concerned with issues such as flood and drought prediction, drinking water supply, sewerage and wastewater treatment, water quality control in lakes and streams, and operational control of water in rural and urban areas.

**Geo-Engineering** is offered as part of the MSc Programme in Civil Engineering and the MSc Programme in Applied Earth Sciences. It provides an understanding of the geo-mechanical processes that are essential to ensure safe construction on or in the ground. Important themes include construction risks, natural hazards and subsoil water quality.

**Geoscience and Remote Sensing** focuses on technology for the observation and understanding of our environment. Students learn how satellite, airborne, and ground-based observation methods can be applied to monitor processes on earth.

**Environmental Engineering** is about air flows, clouds, rainfall, rivers and groundwater. In this track students learn how the presence of man influences life cycles and how technology can help solve environmental and climatological problems.

"During the second year of the bachelor, I realized that the courses related to Geo-Engineering really caught my attention. Soil is an interesting material, but it is difficult to predict exactly how it behaves. As a geo-engineer you are involved in every project, because the subsurface is always involved. Whether you are building a tunnel, a dike, a high rise building or every other structure, you are always constructing in, on top or with soil. The courses of this master track are very diverse. The courses include geology, lab testing, modelling, soil mechanics and of course applied subjects such as designing a tunnel or foundation. Geo-Engineering is a small master track. This means that you know all your fellow students and staff members resulting in a warm department. I hope that after obtaining my degree I will work on large projects involving complex problems in which I really can apply my knowledge as a geo-engineer."

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**Patricia van der Hulst, Master’s student Geo-Engineering**

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<thead>
<tr>
<th>First year</th>
<th>2nd semester</th>
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<tbody>
<tr>
<td>1st semester</td>
<td>2nd semester</td>
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<tr>
<td>Track-specific courses (56 EC)</td>
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<tr>
<td>Climate Change: Science &amp; Ethics (4 EC)</td>
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<tr>
<td>or Philosophy, Technology Assessment and Ethics for Civil Engineers (4 EC)</td>
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**Second year**

<table>
<thead>
<tr>
<th>1st semester</th>
<th>2nd semester</th>
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<tbody>
<tr>
<td>Internship (10 EC)*</td>
<td>MSc Thesis (40 EC)</td>
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<tr>
<td>Multidisciplinary Project (10 EC)*</td>
<td></td>
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<tr>
<td>Additional Graduation Work (10 EC)*</td>
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<tr>
<td>Electives (10 EC)*</td>
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* You must choose two out of four

1 EC = 28 hrs study, according to the European Credit Transfer System (ECTS) • One academic year = 60 EC • Total number of credits in the MSc track Civil Engineering = 120 EC

For more information on all courses: [www.studyguide.lutefl.nl](http://www.studyguide.lutefl.nl)
Examples of graduation projects

- Protection of Shanghai from Flooding: ‘Open or closable navigational section?’
- Quantifying the impact of loads on connections between segments of an immersed tunnel
- Potential Measures to reduce Fluvial and Tidal Floods in the Pampanga Delta, Philippines
- Numerical modelling of wave-current interaction with the use of a two-way coupled system
- Bed level changes in the Waal during floods

Career prospects

Civil Engineers from Delft have a worldwide reputation. They are renowned for their creativity and ability to solve complex problems, challenges that often lead them to work in complex and unpredictable professional environments and to assume leading roles in organisations across the world. Your career prospects as a graduate of the TU Delft Programme in Civil Engineering are outstanding. Opportunities abound in the public sector as well as with engineering firms, building contractors, consultancies, international development organisations and research institutes.

"Dutch civil engineers are famous for their knowledge and skills in protecting deltas from flooding. Think of our Delta Works, our coastal defences like the 'sand motor' and the River Programme creating more room for the rivers in the Dutch Delta. The dikes and flood barrages in the Netherlands and abroad are typical examples of the work you can do as a civil engineer.

The focus of the TU Delft programme is on finding solutions for complex challenges now and in the future. Large civil engineering projects have a huge impact on our environment and demand a complex process of planning and preparation. Working in this field requires a broad scope of not only in-depth technical knowledge, but also skills to integrate the input of all disciplines which are involved.

You will be educated as an academic engineer with a lot of technical knowledge as well as the ability to find new creative and innovative solutions to maintain our leading role in this industry. New developments in sustainable and environment-friendly solutions will challenge future engineers. To develop these skills, the programme contains a lot of science which will be applied to real-life cases. In the programme you choose a specific domain (track) of civil engineering as your field of expertise. Within this track various options for further specialisation are available. Not only can you specialise as a designer/specialist, but also combine technical in depth knowledge with an integrator role for a future career in civil engineering project management.”
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 upon 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 for 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 on 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.

For international students, the application period starts on 1 October 1 and closes on 1 April. To start an MSc application, please complete the online application and pay the non-refundable application fee of €100. Next, you will receive an email with the 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 very 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 full details, requirements, deadlines and contact information: www.cive.msc.tudelft.nl

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www.campus.tudelft.nl

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