

Civil Engineering

MSc Programme



Civil engineering is all around you. Roads, waterways, sewage treatment plants, ports, bridges and flood defences are just a few everyday examples. Civil engineers are versatile specialists, adding to the quality of life and the environment by creatively and responsibly planning, designing, constructing and managing infrastructure, meanwhile appreciating the complex system of societal interests and nature values, both today and in the future.

Degree	Master of Science
Starts	September
Type	full-time
Credits	120 ECTS, 24 months
Language	English
Application deadline	1 April: International students 1 July: Dutch degree
Tuition fee	€ 18.750 (non EU) € 2.168 (EU)
Scholarships	scholarships.tudelft.nl

Programme

Modern civil engineering is sometimes about designing stand-alone infrastructural objects, but mostly about providing innovative solutions in a system where societal requirements, sustainability, environmental values, financial restrictions and technical possibilities need to be balanced. This forms a major challenge, requiring the civil engineer to have a broad scope and the ability to deploy in-depth technical and scientific knowledge and skills in a multi-disciplinary environment. The MSc Civil Engineering programme at TU Delft is composed to prepare students for this challenge. It comprises eight specialisation tracks, together covering the extent of the discipline. Students choose one of these tracks. Each track builds on knowledge on

mathematics, elementary structural, soil and fluid mechanics, hydrology, dynamics and so on acquired in previous education at BSc or comparable level. Tracks combine compulsory courses related to the specialisation with electives and topical projects. The electives provide options for further specialisation in some area or to connect with other tracks or disciplines. The relation between the programme on the one hand and scientific developments as well as practical applications on the other hand, shows clearly in these projects. They offer opportunities for connections with in-house research programmes and also for co-operation with engineering consultants, contractors and other parties outside the university. This applies especially to the graduation project that

FIRST YEAR	SECOND YEAR
TRACK-SPECIFIC COURSES (TOTAL OF 56 EC): •COMMON BLOCK (32 EC) •SPECIALIZATION SPECIFIC COURSES (24 EC)	SPECIAL SUBJECTS (WHICH MAY INCLUDE): • ADDITIONAL GRADUATION WORK, RESEARCH PROJECT (10 EC) • ELECTIVE (10 EC) • INTERNSHIP (10 EC) • MULTIDISCIPLINARY PROJECT, CIVIL ENGINEERING CONSULTANCY PROJECT (10 EC)
COMPULSORY ETHICS COURSE (CHOOSE ONE OUT OF 5 EC): •PHILOSOPHY, TECHNOLOGY ASSESSMENT AND ETHICS FOR CT •CLIMATE CHANGE: SCIENCE & ETHICS •ETHICS OF TECHNOLOGICAL RISK	ELECTIVE COURSES (10 EC)
• ETHICS OF TRANSPORTATION • WATER ETHICS	MSC THESIS (40 EC)

completes the programme. Once you have completed one of the eight tracks, you will be an academic specialist in the field of civil engineering, with a world of opportunities and challenges ahead of you.

Specialisations

The programme offers eight tracks:

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.

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.

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.

Hydraulic Engineering is about flood protection, hydraulic structures, building with nature, port design and physics of ocean, coastal and river systems. Students learn to apply fundamental physics and practical knowledge in a wide variety of hydraulic engineering challenges.

Structural Engineering covers the use of mechanics and materials science in the design and construction 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.

Graduation examples

- Nature enhancing opportunities for an artificial North Sea island: Opportunity study for the Dogger Bank
- Arch of glass-concrete: Design of arch constructed with glass-concrete composite components
- Adjusting train routing in case of planned infrastructure maintenance

Career prospects

Your career prospects as a graduate of the MSc programme in Civil Engineering are excellent. Opportunities abound in the public sector as well as with engineering consultants, contractors, governmental bodies, international development organisations and research institutes. Civil Engineers from Delft have an outstanding worldwide reputation. They are able to work professionally in complex and unpredictable environments and to assume leading roles in these organisations worldwide.



2nd
in QS subject ranking
Civil Engineering



8
Master Tracks



64
EC of 120 Electives



70%



30%



35%
international students



405
first year students in 2020