

ENGD PROGRAMME CIVIL ENGINEERING

UNIVERSITY OF TWENTE.



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Have you finished your master's programme and are you ready for a new challenge? Would you like to keep studying and get paid while you're at it? Are you interested in technological designs and would you like to jump-start your career?

The EngD (Engineering Doctorate) programme in Civil Engineering at the University of Twente might be just the ticket! It's a two-year post-master's programme with a focus on design.

This EngD programme will educate you to develop high-quality, creative and innovative design solutions for complex civil engineering challenges. As a technological designer, you will be perfectly capable to link various disciplines and then integrate them to produce effective designs.

THE PROGRAMME

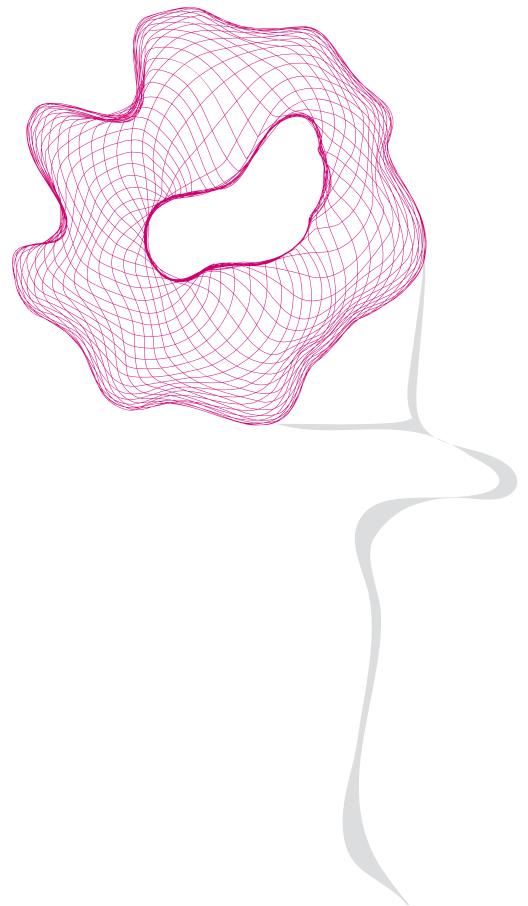
The post-master EngD programme combines academic research in a professional context with education in a range of related subjects. It involves coursework and culminates in a design project. As a trainee, you will be employed by the University of Twente or you will be placed at a company. During your employment, you will receive a salary.

The two-year programme comprises three main components: professional development, in-depth and broadening coursework, and a technological design project for a company. The educational component and the design project can be undertaken in parallel or sequentially. For each EngD trainee, the educational programme is tailored to the needs of the specific design project, described by the company. The EngD programme is built up as follows:

1. **Professional development** (~10% of programme), including professional effectiveness and electives such as technical writing, project management, interviewing skills, and conflict management.
2. **State-of-the-art post-graduate education** (~40% of the programme), comprising generic courses such as Systems Engineering and Design Methodology, and courses that are focused on the design project. See www.utwente.nl/go/engd-ept-courses for an anthology of courses.
3. **A technological design project** (~50% of the programme). This project focuses on producing a design as a technological solution within the field of the main themes of water management, transport or construction engineering. During the design project, you will directly apply your newly acquired knowledge. You will create technological innovations relevant for industry and society.

DIPLOMA AND DEGREE

You will receive a certified diploma upon successful completion of the programme. You will be entitled to use the degree Engineering Doctorate (EngD) and you will be registered as a Technological Designer in the register kept by the Royal Institute of Engineers in the Netherlands (KIVI). The quality of the programme is assured by an assessment and certification procedure carried out by the Dutch Certification Committee for Technological Designer Programmes (CCTO, Nederlandse Certificatie Commissie voor Opleidingen tot Technologisch Ontwerper).



ENGD IN CIVIL ENGINEERING

Projects in the field of civil engineering are becoming increasingly complex. On the one hand, the spectrum of potential technical solutions is becoming wider thanks to technological innovations. On the other hand, the context of these projects is also becoming very complex. Consider for example an urbanised area with many – and often conflicting – constraints from an infrastructure, management, or administrative perspective.

Because of this increasing complexity, the market requires highly qualified civil engineering designers who are experts in the various technical and non-technical aspects of conflicting issues. Furthermore, the market requires employees who are skilled in working in a multidisciplinary design team and know how to approach complex issues and arrive at practical solutions.

The purpose of the EngD programme is to educate trainees who will be the 'new highly skilled technological designers' in the field of civil engineering. The programme focuses on solving design issues within the main themes of water management, transport and construction engineering. Examples of complex design issues include among others, the accessibility of urban areas, the need for high-quality public transport, risk management, dealing with climate change, urban renewal, asset management for infrastructure or complex buildings (e.g. hospitals), above- and underground infrastructure, multifunctional land use, etc.

STUDYING AFTER YOUR MASTER'S: ENGD OR PHD?

Although the EngD and PhD are both postgraduate titles, the EngD programme and the PhD process are not equivalent. The EngD is a practically oriented doctorate in engineering which is better suited to the needs of industry, whereas the PhD focuses on fundamental, scientific research. The three most pronounced differences between a PhD and EngD programme for you as a trainee are:

- The EngD has a duration of 2 years whereas the PhD has a duration of 4 years;
- The EngD trainee is mostly engaged with the professional field, the PhD trainee is mostly, directly engaged with the university's researchers.
- The EngD focuses on (technological) designs, the PhD focuses on fundamental research. In short: if you are an ambitious student who has completed a master's degree and would like to focus more on design and less on fundamental science, then the Civil Engineering EngD programme might be the perfect opportunity for you!

INTERESTED?

The EngD programme is the perfect step for talented students with a master's degree in Civil Engineering or a related specialisation (both national and international) who are interested in designing solutions for complex technological problems. If you would like to apply for this EngD programme, check www.utwente.nl/vacancies to see if there are any open vacancies, or look at www.utwente.nl/go/engd-admission for an open application.

UNIVERSITY OF TWENTE

High Tech, Human Touch. That is the University of Twente, located centrally in Europe in the east of the Netherlands in the city Enschede. The University of Twente is where talent can best realise its full potential. Students and staff are the key. Together, 3300 scientists and professionals carry out ground-breaking research, bring about socially relevant innovation, and provide inspiring teaching for more than 9000 students. To us, entrepreneurship comes as second nature. The campus is home to around 100 businesses, including student-run businesses. The University of Twente has also generated more than 700 successful spin-off companies. The university's business park, Kennispark Twente, encourages and assists entrepreneurs to start new companies. But there's so much more than that happening on our wonderful, green campus. Our sports and cultural facilities are unique and we host events such as the world's largest student think tank, Create Tomorrow.



"After my MSc "Geo-information Science and Earth Observation for Environmental Modelling", I choose to take a PDEng programme because I like to have a job in industry rather than in academia. Therefore it is interesting for me"

- Fatemeh Mahmoudi -



TWENTE GRADUATE SCHOOL (TGS)

The Post-Master EngD programmes at the University of Twente are part of TGS, which is the University section that registers doctoral students and EngD trainees. The mission of TGS is to train and educate excellent researchers and designers, usually at the start of their career, and to present and promote excellent research via clustered or separate (professional) doctoral programmes. TGS coordinates high-quality educational programmes based on topics closely related to the work of the university's research institutes, taught and supervised by expert researchers.

ENGD, AN INITIATIVE OF THE 4TU FEDERATION

Hundreds of companies have already had good experiences with the EngD programmes that are offered at the four universities of technology in the Netherlands. The universities of Delft, Eindhoven, Twente and Wageningen are responsible for the joint post-master's design programmes offered under the auspices of the Stan Ackermans Institute, 4TU School for Technological Design. For more information: www.4tu.nl/sai

INFORMATION ABOUT THE PROGRAMME

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