



ENGD PROGRAMME BUSINESS AND IT

UNIVERSITY OF TWENTE.

ENG D PROGRAMME BUSINESS AND IT

Have you finished your master's programme and are you ready for a new challenge? Would you like to continue studying and get paid while doing that? Are you interested in creating technical solutions in Business & IT and would you like to jump-start your career?

The EngD programme Business & IT at the University of Twente might be just the ticket! It's a two year post-master's programme with a focus on design.

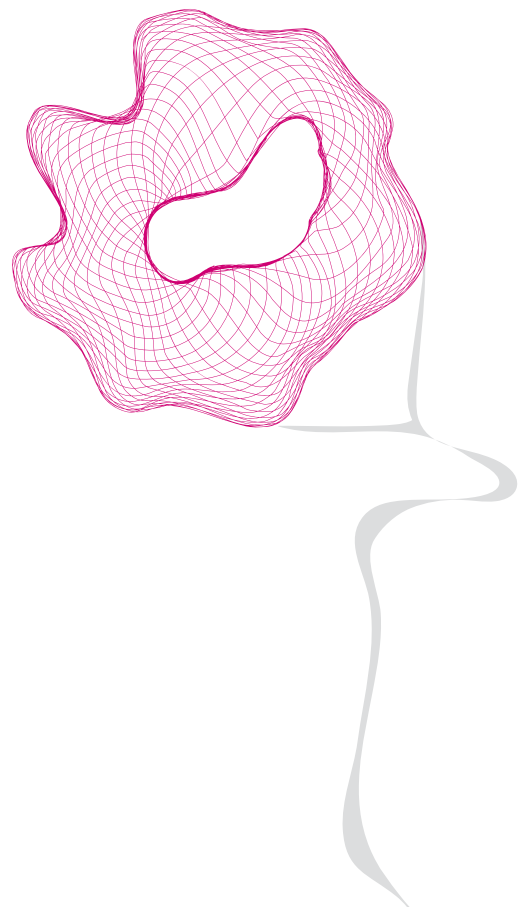
The EngD (Engineering Doctorate) programme BIT (Business & IT) educates you to develop high-quality, creative and innovative designs for complex issues. As a technological designer specialised in the field of BIT, you will be perfectly capable of linking various disciplines and integrating them to produce effective and creative solutions to complex issues involving business and IT.

ENG D IN BUSINESS AND IT (ENG D BIT)

In today's networked and individualised world, businesses, consumers, citizens and governments interact in complex networks that span the globe and at the same time have huge local impact. Information technology (IT) is the means to make these innovations and their impact possible. IT allows organizations, people and devices to connect, to make these connections mobile and to analyse the huge amounts of data generated by these connections. This in turn makes intelligent services possible, by which business and non-profit organizations can offer innovative products and services. However, careful analysis of IT-based mechanisms of value generation in business networks and IT-based design of new organizational configurations are needed to make these innovations successful. The Professional Doctorate in Engineering in Business and IT aims to raise the level of competence of professionals in IT to deal with the opportunities and challenges that IT-based innovations pose. The complexity of today's IT-enabled world implies that IT professionals cannot restrict themselves to one discipline, such as Computer Science or Management Science. They need competences ranging from requirements engineering to system architecture, from design thinking to business analytics, and from e-business innovation to modernisation of legacy systems. Technology is changing fast, and professionals need to keep themselves up-to-date. At the same time, some of the problems of business-IT misalignment, legacy software and global cooperation are persistent. Modern IT professionals need to work in multidisciplinary teams to manage these problems. The mission of the BIT EngD programme is to deliver professionals who are able to understand and design robust and economically sustainable IT-enabled networks, such as social networks, on-line markets, business networks and public service networks, which balance economic opportunities and

online IT risks to attain business goals. Examples of designs include:

- An enterprise architecture with proper IT support and a migration plan;
- A microservices-based application architecture for an application with stringent availability and scalability requirements;
- Solutions for cybersecurity threats caused by systems and human behaviour;
- Algorithms and tools based on machine learning for analysing data from business processes, possibly at runtime.



THE PROGRAMME

The postgraduate EngD programme combines academic research in a professional context with education in a range of related subjects. It involves course work and ultimately results in a design project carried out in close cooperation with industry. Depending on the type of contract, as a trainee you will be employed either by the University of Twente or by the industrial partner involved. In either case you will receive a salary. The two-year programme consists of three main components: professional development, course work and a design project. The educational component and the design project can be scheduled in parallel or sequentially (here flexibility is key). For each EngD trainee, the educational programme is tailored to the specific design project, which will be realised for the company. The EngD programme is built up as follows:

1. **Professional development** (~10% of programme), including compulsory courses in professional effectiveness and an Introduction of the Twente Graduate school. Besides that you can choose a number of elective courses such as, e.g., technical writing, project management, interviewing skills and language courses;
2. **Post-Master education** (~40% of programme), comprising generic courses (e.g., a course that provides you with the necessary design skills), but also courses specific to accomplish your design project. These can be courses at the University of Twente, in-company courses, conferences or courses at research schools.
3. **A technological design project** (~50% of programme). This business-related IT-project focuses on producing a design (either a product or a process/methodology/software) that complies with technical, financial, logistics and organisational specifications set for the problem at hand. During the design project, you will directly apply your newly acquired knowledge, while searching for a pragmatic solution for the problem stated by the (industrial) partner. You will create technological innovations relevant for industry and society.

DIPLOMA AND DEGREE

After successful completion of the programme you will receive a certified diploma. You will be entitled to use the EngD degree 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').

STUDYING AFTER YOUR MASTER'S: ENGD OR PHD?

Although the EngD and PhD are both postgraduate degrees, the EngD programme and the PhD process are not equivalent. The EngD is a practical-oriented professional doctorate in engineering, which is better suited to the direct needs of industry, whereas the PhD focuses on 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 engaged with the professional field, the PhD trainee is directly engaged with the university;
- The EngD focuses on (technological) designs, the PhD focuses on research. In short: if you are an ambitious student who has obtained a Master's degree and would like to focus on design and applications, the EngD programme Business & IT might be the perfect opportunity for you!

INTERESTED?

The EngD programme is the perfect step for talented students with a Master's degree in Computer Science, Internet Science & Technology, Software Technology, Business Information Technology (BIT), Industrial Engineering and Management, Interaction Technology, or a related specialisation. You should be interested in designing solutions for complex issues in the field of Business & IT. Vacancies for EngD positions at the University of Twente are offered on the vacancies website: www.utwente.nl/vacancies.



"As an EngD trainee you will get the proper knowledge and skills to address business and IT issues in a design project formulated by an organisation that fits the organisation's needs."

- L. Ferreira Pires (EngD Programme Director) -



MORE INFORMATION

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THE 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 10.000 students resulting in an outstanding track record in value creation, starting up and spinning off new businesses with some 1,000 successful ventures to date.

ENG D, PART OF THE TWENTE GRADUATE SCHOOL

The EngD programmes at the University of Twente are part of the Twente Graduate School (TGS). TGS is the University section that registers doctoral students and EngD trainees. Its mission is to train and educate excellent researchers and designers, usually at the start of their career, and to present and promote excellent research and design via clustered or separate (professional) doctoral programmes.