

BACHELOR OF SCIENCE INDUSTRIAL DESIGN ENGINEERING

120

NUMBER OF FIRST-YEAR STUDENTS

71%

PROCEEDS TO SECOND YEAR

49%

GRADUATES WITHIN 4 YEARS

92%

CONTINUES STUDYING

UNIVERSITY OF TWENTE.



INDUSTRIAL DESIGN ENGINEERING INTRODUCTION

Will you design the consumer products and services of the future? Products, services and systems that don't just look good, but are also geared to the needs of end-users, the production process, packaging requirements and recyclability? In our three-year, English-taught Bachelor's in Industrial Design Engineering you will learn to combine technology and creativity to design and improve products, services and systems. Together with fellow students, you will spend time in the workplace designing and making physical and virtual (consumer) products, services and systems that are practical to use, well-designed and in line with users' needs and wants. If you want to get a solid foundation in technology and engineering and cover a variety of subjects, from mathematics to graphic design and from ergonomics to marketing, Industrial Design Engineering (IDE) is the right choice for you.

COMBINE DESIGN WITH ENGINEERING AND TECHNOLOGY TO CREATE STRONG PRODUCTS, SERVICES AND SYSTEMS

The Bachelor's in Industrial Design Engineering equips you to come up with and produce new or improved products, services and systems that benefit people and society. You do this by combining a variety of advanced technologies and a purposeful, systematic approach to engineering with firm knowledge and skills in design.

Many industrial design engineers have clear ideas about how something can be improved and enjoy making something that people around them can actually use. In this Bachelor's, you learn to translate the end-users' wishes into a products, systems or services that work well and look good. You do this by combining a variety of advanced technologies and a purposeful, systematic approach to engineering with firm knowledge and skills in design. You gain expertise in all the necessary disciplines, from mathematics and engineering to design and marketing. This helps you establish a solid foundation for further specialisation in the Master's in Industrial Design Engineering.

With your knowledge and skills as an industrial design engineer, you are equipped to design smart, working solutions that make life more enjoyable, easier, better and sometimes even completely different, contributing to an ever-changing world.

PROGRAMME STRUCTURE

Your Bachelor's takes three years. Every year you follow four 10-week modules. In some modules you work on a subject which is relevant in society, business or industry. This theme brings together all the different components of your study: theory and practice, research, designing solutions, self-study and teamwork. The project is a fixed part of every module. In this project you and your teammates apply the knowledge you have acquired and design a workable solution. This learning method is part of the Twente Education Model (TOM): an innovative approach to studying that you will only find at the University of Twente.

HONOURS PROGRAMME

Would you like to learn about other scientific disciplines, in addition to your study? The Bachelor Honours programme is an extracurricular broadening programme of 30 EC in which ambitious students are challenged to enrich their knowledge, skills, attitude, cooperation, and experiences outside their own study discipline. The programme starts in February en lasts for 1.5 years.

ut.nl/honours

ADMISSION REQUIREMENTS

FOR DUTCH STUDENTS (VWO-PROFILE)

NT	NG	EM	CM
✓	WIB + NA	WIB + NA	WIB + NA

FOR INTERNATIONAL STUDENTS

- Certificate equivalent to Dutch VWO (e.g. British A-levels, International Baccalaureate)
- English (CEFR, B2/C1 level; IELTS 6.0, TOEFL 80 or Cambridge CAE)
- Mathematics, Physics



INDUSTRIAL DESIGN ENGINEERING PROGRAMME STRUCTURE

Your bachelor's takes three years. Each year, you will follow four ten-week modules. This means that during the course of your studies you will complete twelve modules.

FUTURE-PROOF EDUCATION

In each module, you will address a topic that is current in society, business or industry. This topic brings together all parts of your study: theory and practice, research, designing solutions, self-study and teamwork.

A fixed part of each module is the team project, in which you apply your acquired knowledge to a real-life challenge and design a solution together with team members from other programmes. In this way, you will learn to look beyond the boundaries of your own discipline and make connections that result in unexpected solutions. This challenging learning method is part of the Twente Education Model ut.onl/tom: an innovative way of studying that you will only find at UT.

BACHELOR'S STRUCTURE

During the first year, you will become familiar with the basics of technical and scientific disciplines. In the projects and practical assignments - which together make up around 30% of your programme - you can immediately apply the knowledge you gain.

The second year is about broadening and deepening your knowledge and you can start to pursue your own interests by getting familiar with popular master's.

The third year is made up of elective modules in which you will prepare yourself for your future master's and graduation assignment, the final step you must take before you can call yourself a Bachelor of Science.

STUDY OVERVIEW

EXPLANATION OF MODULES

YEAR 1

Module 1	Ideation
Module 2	Prototyping
Module 3	Designing with and for humans
Module 4	Mass production

MODULE 1 | IDEATION

In the first module of the Industrial Design Engineering curriculum, you will get acquainted with all aspects of your future discipline. In a series of short design challenges, you will get familiar with the basic design process and the two 'languages' of the industrial design engineer: the design and engineering languages. Learning both languages will be supported by courses on design theory, statics, and mathematics. In the challenges, you will learn to use both languages with workshops in the studio. Every design challenge will be finalised with a presentation market where you -together with your group members- show your design results to your fellow students.

MODULE 2 | PROTOTYPING

In the second module, you will learn to build a mechanical and functional prototype based on a given analysis and a programme of requirements. You will test this prototype and, based on this, make recommendations to improve its functionality. In the module you will learn technical product modelling, process and material selection and mechanics of materials. Learning these disciplines will support you in creating a functional prototype that can be validated.

MODULE 3 | DESIGNING WITH AND FOR HUMANS

In the third module you will learn all about taking the human perspective on the design process by working with an end-user, specifically someone with a physical disability. Learning about the principles of Human Centred Design and applying them in the project will result in a well-fitting product design for the specific requirements and context of the end-user. The courses are integrated with the project and will offer you the principles and tools needed to learn from and work with the end-user. You will apply the mechanics of interacting with a product, and visually communicate contexts and concepts.

MODULE 4 | MASS PRODUCTION

In this module, you will dive into the world of modern manufacturing. How do you get – and keep – a comprehensive overview of large, complex manufacturing processes? How can you enhance production efficiency, while taking into account safety and sustainability, but also maintaining low costs? You will learn to enhance production efficiency with simulations and technical modelling. With such simulations, you can optimise production techniques, identify challenges, and redefine assembly lines. In the project, you are going to transform a (working) prototype into a working mass product, taking into account the market needs, mechanical components and producibility.



STUDY OVERVIEW

EXPLANATION OF MODULES

YEAR 2

Module 5	Data driven design
Module 6	Design for value
Module 7	Sustainable futures
Module 8	Product service systems

MODULE 5 | DATA DRIVEN DESIGN

In this module your focus is on understanding and evaluating the value of data in the design process. Each course in the module contributes to the goal of “getting, understanding and using data” for the design and use phase. It addresses the data-driven design (DDD) approach from multiple lenses (e.g., human-centredness, production, ethics, design of information systems) of industrial design engineering. DDD will be used to understand the ways of using data in the design process and during product or system use.

MODULE 6 | DESIGN FOR VALUE

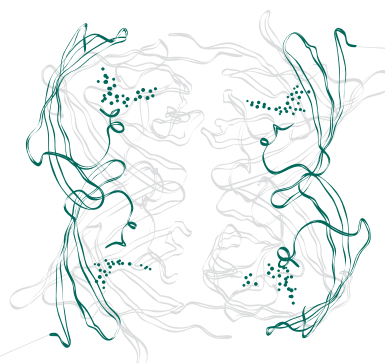
In this module you will work on a multidisciplinary project. You start a design agency with students from Bachelor’s in Mechanical Engineering (ME) and Industrial Engineering and Management (IEM) to design a consumer product for a realistic context. By applying Integrated Product Development you will learn to design a product that creates value for different stakeholders. The required theory will be covered in courses such as Market Research, Value Proposition Design and Product Data Management & Visualisation.

MODULE 7 | SUSTAINABLE FUTURES

This module is all about empowering you as a designer to discover sustainable futures, and to understand your position in this process. You focus on designing and developing potential futures in the realm of packaging design, while dealing with trade-offs and reasoning based on uncertainties. You learn to act and design as a generalist (understanding basic knowledge about designing sustainable futures), and as a specialist to become an expert in a specific topic (such as packaging engineering, life cycle assessment, or consumer and market), in a transdisciplinary project.

MODULE 8 | PRODUCT SERVICE SYSTEMS

This module provides an overview of the principles, methods and tools associated with the design and implementation of a Product Service System (PSS). You will specialise in the design of different aspects of a Product Service System and learn the value of extending traditional product development with additional services. This module will also focus on your personal development, offering various activities aimed at developing your vision, strengths and preferences as a future industrial design engineer.



STUDY OVERVIEW

EXPLANATION OF MODULES

YEAR 3

Module 9	Minor
Module 10	Minor
Module 11	Design for transitions
Module 12	Bachelor's assignment

MODULE 9 AND 10 | MINORS

In your minor space, you have several options:

- Follow subjects to deepen your knowledge of IDE, or broaden your knowledge with subjects from other Bachelor's, such as Civil Engineering, Mechanical Engineering or Industrial Engineering and Management.
- Spend half a year studying at another university in the Netherlands or abroad. This experience will teach you to approach issues from different (cultural) angles, and to develop the flexibility to work in different teams and conditions.
- Join one of our student teams.
- Complete a pre-master's in preparation for a master's degree other than Industrial Design Engineering, such as another technical master's, or one of our social sciences master's.
- Choose the Education minor Learn to Teach and get a second-degree teaching qualification. This allows you to work as a teacher at secondary school level. Please be aware that this minor is in Dutch and allows you to only work as a teacher at secondary schools in the Netherlands.

MODULE 11 | DESIGN FOR TRANSITIONS

This module explores socio-technical transitions and equips you with knowledge and skills to navigate complex, uncertain system dynamics. Transitions are moments of technological, socio, cultural, economic, and industrial change that emerge from various socio-economical drivers. In this module you learn how to create a real-world (system) design that facilitates a transition and is embedded in society and social structures. It entails multidisciplinary subjects and transdisciplinary approaches.

MODULE 12 | BACHELOR'S ASSIGNMENT

During the last module, you conclude your bachelor's programme in Industrial Design Engineering. You demonstrate your capabilities and skills as an independent Industrial Design Engineer at the bachelor level. Your Bachelor Final Assignment can address a wide variety of topics, either with a practical or a more academic focus. After completing this year, you can officially call yourself a Bachelor of Science (BSc).

GET HELP IN CHOOSING A STUDY

Sign up for our orientation activities and events like the Open Days or an online meet-up with a student.

ut.onl/calendar

Emmilie's experience with Industrial Design Engineering at University of Twente

Emmilie enjoys designing packaging that is sustainable, user-friendly and beautiful. She chose the bachelor's programme Industrial Design Engineering, where technology and creativity come together.

"During the design of a product, you learn about all aspects of product development."

"The combination of working with technology and creativity come together within Industrial Design & Engineering.

Because of the small scale of the programme, it is very easy to get to know everyone personally and I quickly felt at home."

THE DESIGN PROCESS

"When designing a product, you are involved from beginning to end: you have an idea, then you sketch a design and analyse how a product works. Once the product is developed, you think of how to market it while continuing to do research and look for ways to improve the product."

BUSINESS CONTACTS

"Because you do assignments for different companies, you learn how things work in such firms. I carried out an assignment for EMSA, who make products to keep food fresh and drinks hot or cold. I also designed a juice dispenser for Vespa, the well-known Italian scooter brand. In this way, you learn to recognise typical design elements of a brand and transform them into a new product.

I became increasingly interested in designing packaging that is sustainable, user-friendly and attractive. During my bachelor's assignment, I researched how to make detergent packaging sustainable. I wanted to use as little ink as possible because this makes recycling more difficult. Did you know that black plastic bottles cannot (yet) be recycled? I designed packaging for Robijn that was less harmful to the environment. I chose plastic that was not contaminated by coloured ink, so I preserved the quality of the material. At the same time, I wanted the packaging to be attractive. It was a challenge to make it more sustainable without removing all the identifiable components at once. For instance - introduce a removable label to make recycling easier."

FROM CONTAINERS TO DETERGENT PACKAGING

"The assignment for EMSA was: 'come up with a new product'. I worked in a multidisciplinary team: Industrial Design students took care of the creative part; Mechanical Engineering students looked into the technology of sustainably manufacturing the product; Technical Business Administration students investigated how to market the final product. We made an extra-large family picnic thermos jug with four built-in cups."

EXTRA CURRICULAR

"During my programme, I shared my experiences via Open Days. I also became chairperson of the Student Union. This is a student organisation within UT that is dedicated to the personal development and welfare of students. I encouraged students to become active in sports or cultural associations, but also within UT itself. Student participation is an important asset at UT. Lecturers and staff are always happy to discuss your input which creates an atmosphere of appreciation and stimulation. And alongside helping many students on their way, I also learned a lot myself."



"I design packaging that is sustainable, user-friendly and beautiful."

- Emmilie Kuks -

WHAT'S NEXT AFTER COMPLETING THIS BACHELOR'S?

After obtaining your Bachelor's degree in Industrial Design Engineering, you can specialise further by following a Master's programme. Most students choose this option, a few enter the job market straight away or start their own company.

CONTINUE YOUR STUDIES WITH A MASTER'S

Most people who graduate from the Bachelor's in Industrial Design Engineering enter our two-year, English-taught Master's in Industrial Design Engineering. You can specialise in:

- Emerging Technology Design
- Human Technology Relations
- Management of Product Development

You can also choose to enter another master at the University of Twente or at another (international) university. With your Bachelor's diploma, you are directly admissible to:

- [Sustainable Energy Technology](#)
- [Environmental & Energy Management](#)

If you want to complete a different master's at UT, such as [Mechanical Engineering](#), you are required to do a pre-master's.

GOING ABROAD

You can also take a master's at any other university in the Netherlands or abroad. Take into account, that other universities may require you to complete a pre-master's before granting you admission at master's level.

CAREER PROSPECTS

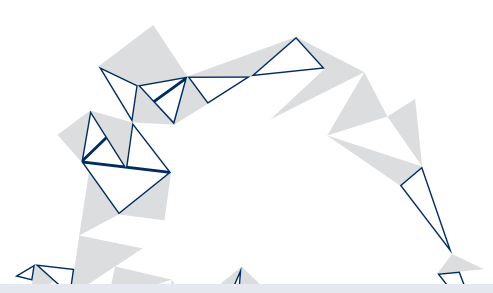
If you want to set to work with your additional master's degree, you will find plenty of job opportunities, also right here in Twente, the fastest growing industrial region in the Netherlands. Most of our graduates find a job within three months of finishing.

You're likely to end up working in a position in which you can, literally and figuratively, shape the future as a designer who is comfortable with all aspects of the product development process and can operate across the boundaries between different disciplines, for example:

- Engineering & Production
- Research & Development
- Management & Consultancy

START YOUR OWN COMPANY

You can also start your own business with a solution that you have developed. UT is recognised as 'the most entrepreneurial university' in the Netherlands. We are strong in the application of expertise to meaningfully influence society. Together with our students, we like to work with the innovation specialists from [Novel-T](#), who like to tap into promising innovative business cases.





GET IN TOUCH


Questions about this study programme? Whatever your question is, we will be happy to help you.

[Contact us!](#)

 **University of Twente**

 study@utwente.nl

 +31 (0)53 489 5489

 +31 (0)6 51842633



NEED AND NICE-TO-KNOW STUDENT INFORMATION

There are a couple of things you should know before you apply for the Bachelor's in Industrial Design Engineering at the University of Twente.

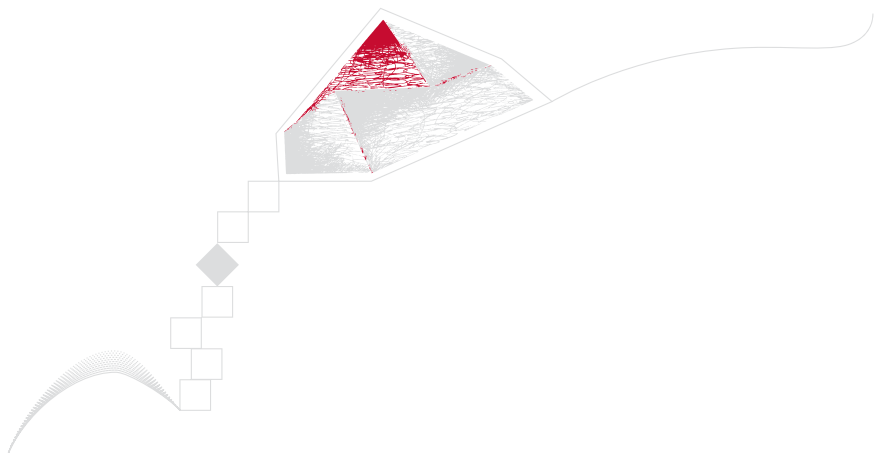
Have you decided to sign up for the Bachelor's in Industrial Design Engineering? Check the admission requirements to be sure that your application will succeed.

QUICK LINKS

- [Check the admission requirements](#)
Are you a prospective, international student who doesn't meet the admission requirements? A [foundation year](#) is a possibility!
- [Application deadlines](#)
- [Start your application](#)

GET HELP IN CHOOSING A STUDY

What will you study and where? Sign up for our orientation activities and events like the Open Days or an online meet-up with a student. Have a look at the study choice calendar ut.onl/calendar!



WHY CHOOSE TO STUDY AT UT?

As a UT student, you will learn how to use innovative technologies to influence today's societal challenges meaningfully. You will benefit from excellent, highly personalised education and research in fields ranging from social sciences and engineering to natural sciences and life sciences. You will learn to work with experts from other disciplines and cultures. In doing so, you will develop in-depth professional knowledge and intensive personal growth.

Your study location is our campus: a dynamic community for young people to work, live and socialise. It's a breeding ground for brilliant ideas, where you follow academic education and apply your new skills in the various state-of-the-art labs. This is also where you meet up with friends, play sports or visit the theatre. You can even go for groceries or catch up in the bar. And downtown Enschede is just a 10-minute bike ride away!

1ST
UNIVERSITY WITH THE MOST SOCIETAL IMPACT IN NL

11,997
STUDENTS IN TOTAL

1,600+
PROFESSIONALS TRAINED

114
NATIONALITIES

378
LAB FACILITIES

3,000
STUDENT APARTMENTS

46
SPORT ASSOCIATIONS

18
CULTURE ASSOCIATIONS

