Facts & Figures

2016/2017

TU Delft

Contents

Portrait

Vision

TU Delft believes its role in society is to supply technological solutions that take us significantly further along the road towards sustainability and a flourishing economy. We position ourselves as an open academic community which, through our academic staff and graduates, is represented throughout the academic world while also embedded in our own regional and national, social and economic environment.

Mission

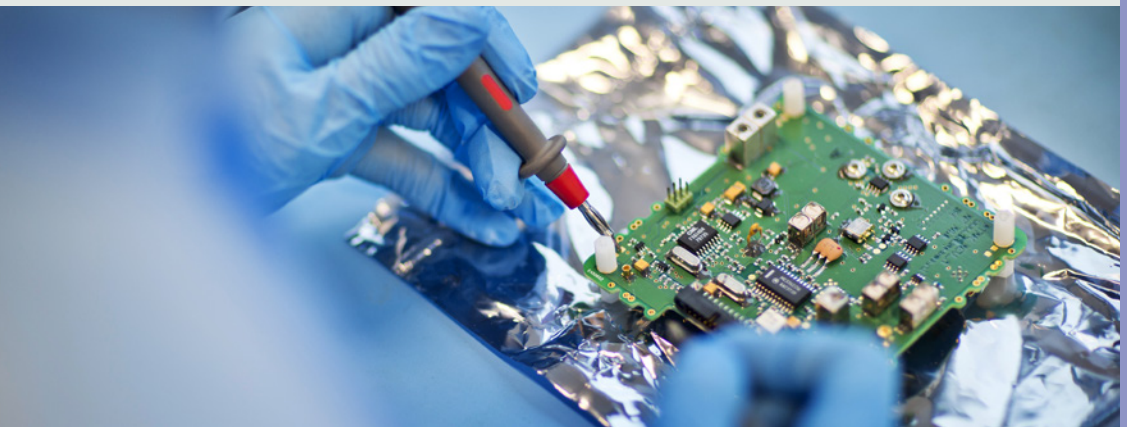
TU Delft's mission is to make a significant contribution to a sustainable society for the 21st century by conducting ground-breaking scientific and technological research – acknowledged as world class; by training scientists and engineers with a genuine commitment to society; and by helping to translate knowledge into technological innovations and activities with both economic and social value.

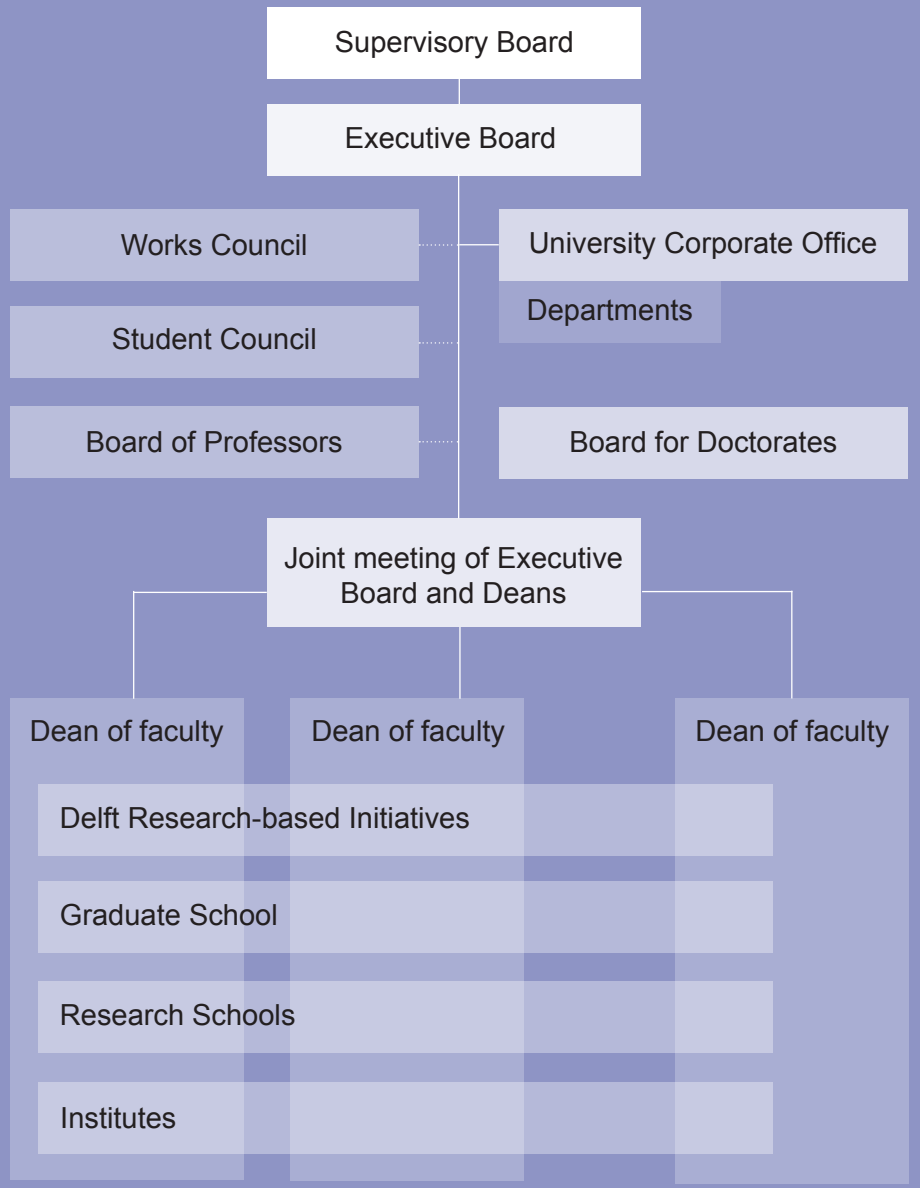
Values

The core values that guide all those associated with TU Delft are:

- Respect
- Integrity
- Expertise
- Transparency
- Avoidance of conflicts of interest

Our modus operandi as an institution is trust – by which we mean that every member of our community is expected to comply with our core values, to draw inspiration from them and to feel responsible for upholding them. Everyone at TU Delft should act with a sense of social responsibility and be aware of the value of technology's value to and its impact upon society.





Delft University of Technology at a Glance

Finances (2015)	In millions
Equity	363,6
First income stream	411,4
Second income stream	45,3
Third income stream	134,4
Education (2015)	
Bachelor's programmes	16
Master's programmes	30
Student population	20,980
PhD Students	2607
First-year students	4709
Master's degrees	2451
Valorisation (2015)	
Startups	28

Research (2015)	
Professors (FTE)	240
Publications (scientific)	5630
Promotions	357
Personnel (2015)*	
Scientific staff (FTE)	2697
Scientific staff (head count)	2953
Professional services (FTE)	1987
Professional services (head count)	2272

Diversity (2015)*	#	%
International scientific staff (FTE)	1370	51%
Female scientific staff (FTE)	671	25%
International full professors (FTE)	56	23%
Female full professors (FTE)	28	11%
International students	3820	18%
Female students	5274	25%

www.tudelft.nl/factsandfigures

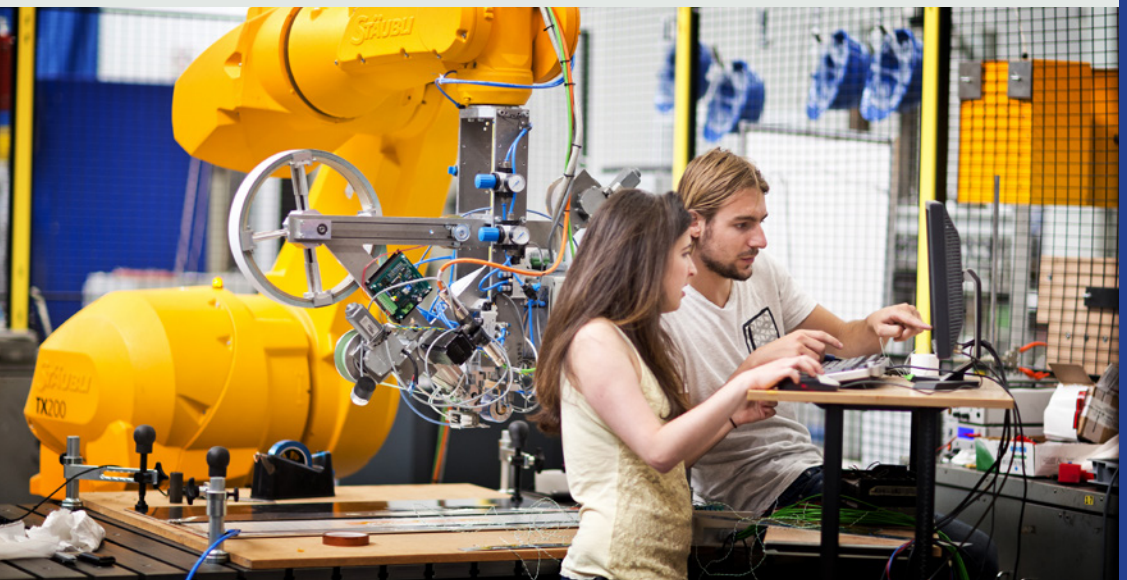
* PhD students are classified as scientific staff. The percentages are calculated over total number of scientific staff, full professors and students, respectively.

Faculties

- Architecture and the Built Environment
- Civil Engineering and Geosciences
- Electrical Engineering, Mathematics and Computer Science
- Industrial Design Engineering
- Aerospace Engineering
- Technology, Policy and Management
- Applied Sciences
- Mechanical, Maritime and Materials Engineering

Education and Students

- TU Delft has developed a portfolio of 16 BSc programmes (including four joint degrees), which cover the broad range of engineering disciplines.
- The University offers more than 30 MSc programmes, several of which are unique in the Netherlands.
- Some of these degree programmes are offered in conjunction with other institutions, under the auspices of either the 4TU Federation (the collaborative venture of the four Dutch universities of technology) or our alliance with Leiden University and Erasmus University Rotterdam.
- Our MSc programmes are taught in English, as are our Applied Earth Sciences, Aerospace Engineering and Nanobiology BSc programmes.
- TU Delft encourages ambitious students to participate in the Honours Programme Bachelor or Master; an extra-curricular programme designed to enrich the overall study experience.



Bachelor's

- Aerospace Engineering
- Applied Earth Sciences
- Applied Mathematics
- Applied Physics
- Architecture, Urbanism & Building Sciences
- Civil Engineering
- Clinical Technology (joint degree)
- Computer Science
- Electrical Engineering
- Industrial Design
- Life Science and Technology (joint degree)
- Marine Technology
- Mechanical Engineering
- Molecular Science and Technology (joint degree)
- Nanobiology (joint degree)
- Systems Engineering, Policy Analysis & Management

Master's

- Aerospace Engineering
- Applied Earth Sciences
- Applied Mathematics
- Applied Physics
- Architecture, Urbanism & Building Sciences
- Biomedical Engineering
- Chemical Engineering
- Civil Engineering
- Computer Engineering
- Computer Science
- Construction Management and Engineering
- Design for Interaction
- Electrical Engineering
- Embedded Systems
- Engineering and Policy Analysis
- Geomatics
- Industrial Ecology (joint degree)
- Integrated Product Design
- Life Science and Technology
- Management of Technology
- Marine Technology
- Materials Science and Engineering
- Mechanical Engineering
- Offshore and Dredging Engineering
- Science Education and Communication
- Strategic Product Design
- Sustainable Energy Technology
- Systems and Control
- Systems Engineering, Policy Analysis & Management
- Transport Infrastructure and Logistics

Post-master's

- Berlage Master in Architecture and Urban Design
- European Postgraduate Masters in Urbanism

Online Education

Professional Education Courses

- Economics of Cyber Security
- Text Mining and Analytics
- Energy Friendly Renovation Processes
- Implementing Customer Insights into your Business
- Design Leadership and Innovation
- Air Safety Investigation
- Advanced Credit Risk Management
- Open Data Governance and Use
- Algorithmic Governance
- Responsible Innovation
- Design of Closure Works
- Membrane Filtration for Water Treatment
- Aircraft Performance
- Smart Structures
- Anaerobic Wastewater Treatment
- Aerobic Granular Sludge for Wastewater
- Project Management (Finance and Complexity)
- Railway Engineering
- Value Sensitive Design
- Corporate Social Responsibility
- Leadership for Engineers

Online Courses

- Aerospace Engineering
- Wind Energy
- Solar Energy
- Engineering & Policy Analysis
- Drinking Water Treatment
- Sanitary Engineering
- Wastewater Treatment
- Urban Drainage and Water Management
- Coastal and Ocean Engineering
- Satellite Data Processing

MOOCs in 2016 and 2017

Industrial Biotechnology

Solving Complex Problems

Leadership for Engineers

Framing

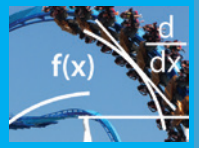
Responsible Innovation

Geoscience

Quantum Cryptography

Cyber Security Economics

Topology of Condensed Matter



Pre-University Calculus

Transport Phenomena

Open Government

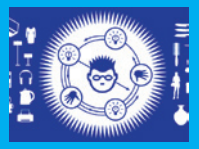
Credit Risk Management

Observation Theory

Building with Nature

XSerie Data Analysis

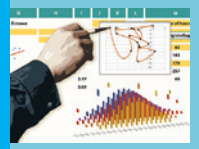
Data Analysis to the MAX()



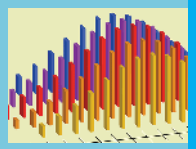
Delft Design Approach

Image | Ability

Management of Engineering Projects



Data Analysis: Dashboard



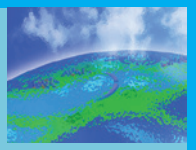
Data Analysis: Visualisation

Design Practice in Business

Programmeren voor kinderen

Sustainable Urban Development

XSerie Water



Water & Climate

XSerie Business Model Innovation

The Value of Business Models

Urban Sewage Water

Drinking Water Treatment

Business Model Metrics & Tools

How to Design a Business Model

Introduction to Solar Energy

Sustainable Energy

Business Model Testing

Business Model Testing

Next Generation of Infrastructure

Nuclear Energy

Aeronautical Engineering

Functional Programming

Circular Economy

Healthy Aging in 6 Steps

In development

- Technology, Entrepreneurship & Cultural Habits
- Sustainable Housing for Developing Countries
- Aerospace Structures & Materials
- Advanced Transport Phenomena
- Mathematical Modelling
- Design for Healthcare
- Railway Engineering
- Delft Urban Design
- Entrepreneurship

online-learning.tudelft.nl/mooc-massive-open-online-courses

Scientific Focus

Architecture and the Built Environment

- Architecture
- Architectural Engineering & Technology
- Urbanism
- Management in the Built Environment
- OTB Research for the Built Environment

Civil Engineering and Geosciences

Structural Engineering •
Hydraulic Engineering •
Water Management •
Geoscience & Remote Sensing •
Geoscience & Engineering •
Transport & Planning •

Industrial Design Engineering

- Design Engineering
- Industrial Design
- Product Innovation Management

Technology, Policy and Management

Engineering Systems & Services •
Multi Actor Systems •
Values, Technology & Innovation •

Aerospace Engineering

- Aerodynamics, Flight Performance and Propulsion & Wind Energy
- Aerospace Structures & Materials
- Control & Operations
- Space Engineering

Applied Sciences

Bionanoscience •
Biotechnology •
Chemical Engineering •
Imaging Physics •
Quantum Nanoscience •
Radiation Science & Technology •

Mechanical, Maritime and Materials Engineering

- Biomechanical Engineering
- Systems & Control
- Maritime & Transport Technology
- Precision & Micro-systems Engineering
- Process & Energy
- Materials Science & Engineering

Electrical Engineering, Mathematics and Computer Science

Electrical Sustainable Energy •
Microelectronics •
Quantum Engineering •
Applied Mathematics •
Intelligent Systems •
Software Technology •

Delft Research-based Initiatives

- Its public mission and core values place the academic institution of TU Delft at the heart of society.
- Its scientists and researchers are working to resolve some of the great and pressing issues of our time in four main areas: Energy, Health, Global Development, and Deltas, Infrastructures & Mobility.
- Helping to solve these and similar problems requires a considerable amount of innovative research and represents an enormous challenge for our staff and students.

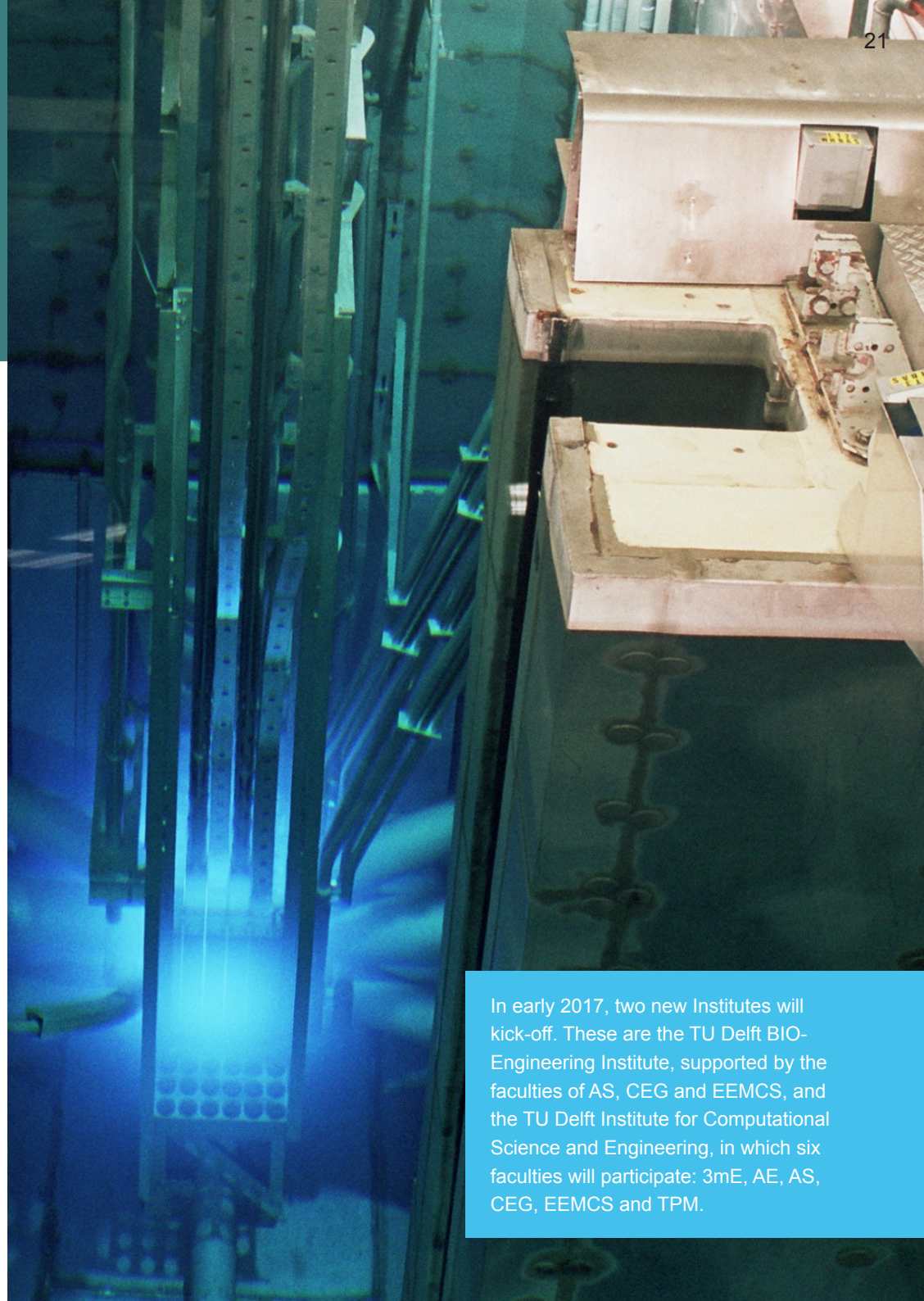
	Energy	Deltas, Infrastructures & Mobility	Health	Global
				
Research fields	• Wind Energy • Solar Energy • Energy Networks • (Chemical) Storage • Energy Efficiency in Design • Energy Efficiency in Industry • Energy in the Built Environment • Geo-energy • Biomass • Nuclear Energy	**Overall programme:** • Vital Infrastructures for Water Safety and Smart Mobility **Specific subjects:** • Sustainable, Efficient Transport • Logistics & Mainports • Safe, Sustainable Deltas and Metropoles **Connective theme:** Resilient, Durable Infrastructures	• Medical Imaging & Image Guided Medicine • Interventions & Care • Targeted Molecular Technology • Vitality	• Science and Technology for Global Development • Sustainable Solutions in Close Cooperation with Partners in Developing Countries **Themes:** Water, Urbanism, Healthcare, Energy, Disaster Resilience
Start	2009	2009	2009	2015
	8 faculties	5 faculties	6 faculties	8 faculties

TU Delft Institutes

Within TU Delft, high-quality research capacity is clustered - either physically or virtually - into several University-wide institutes: the TU Delft Institutes. This organisational structure helps to strengthen the scientific focus and to enlarge the critical mass. In this way TU Delft aims to enhance its external profile with a view to better positioning itself to join national and international consortia and networks, and to become more attractive to top scientific talent.

In 2016, the following eight institutes were running at TU Delft:

Climate	Process Technology	Robotics	Transport	Wind Energy	Safety & Security	Sports Engineering	Space
Focus							
Extreme Weather and the City Aerosols, Radiation and Clouds Observation & Validation of Sea-level Rise and Mass transport Climate Information and Policy	Biochemical Process Engineering Process Intensification Process Technology for Advanced Materials	Swarm Robots Robots that Work Interactive Robots	Coordinated and Co-operative Traffic Management Transport Policy Spatial Planning & Mobility Logistics & Freight Transport Railways	Unsteady Aerodynamics Smart Structure Rotors Design Methods Offshore Components and Design Dutch Wind Energy in Europe	Safety & Security at Home Safety & Security in motion Safety & Security in Society	Aero- and Hydrodynamics Biomechanics, Materials and Human / Material Interaction Measurement, Feedback and Simulation Motivation Sports Infrastructure and Facilities	Sensing from Space Space Robotics Distributed Space Systems
Start							
2012	2012	2012	2012	2012	2013	2014	2015
5 faculties	2 faculties	6 faculties	6 faculties	6 faculties	6 faculties	5 faculties	5 faculties



In early 2017, two new Institutes will kick-off. These are the TU Delft BIO-Engineering Institute, supported by the faculties of AS, CEG and EEMCS, and the TU Delft Institute for Computational Science and Engineering, in which six faculties will participate: 3mE, AE, AS, CEG, EEMCS and TPM.

Entrepreneur-ship@Delft

YES!Delft is our high-tech entrepreneurship centre with a clear mission: we build the leading firms of tomorrow. We inspire students, professionals and scientists to take their first steps along the path to becoming entrepreneurs and offer them the necessary support to turn their enterprise into a 'leading firm'. YES!Delft focuses on companies with a technological, innovative and scalable product or process.

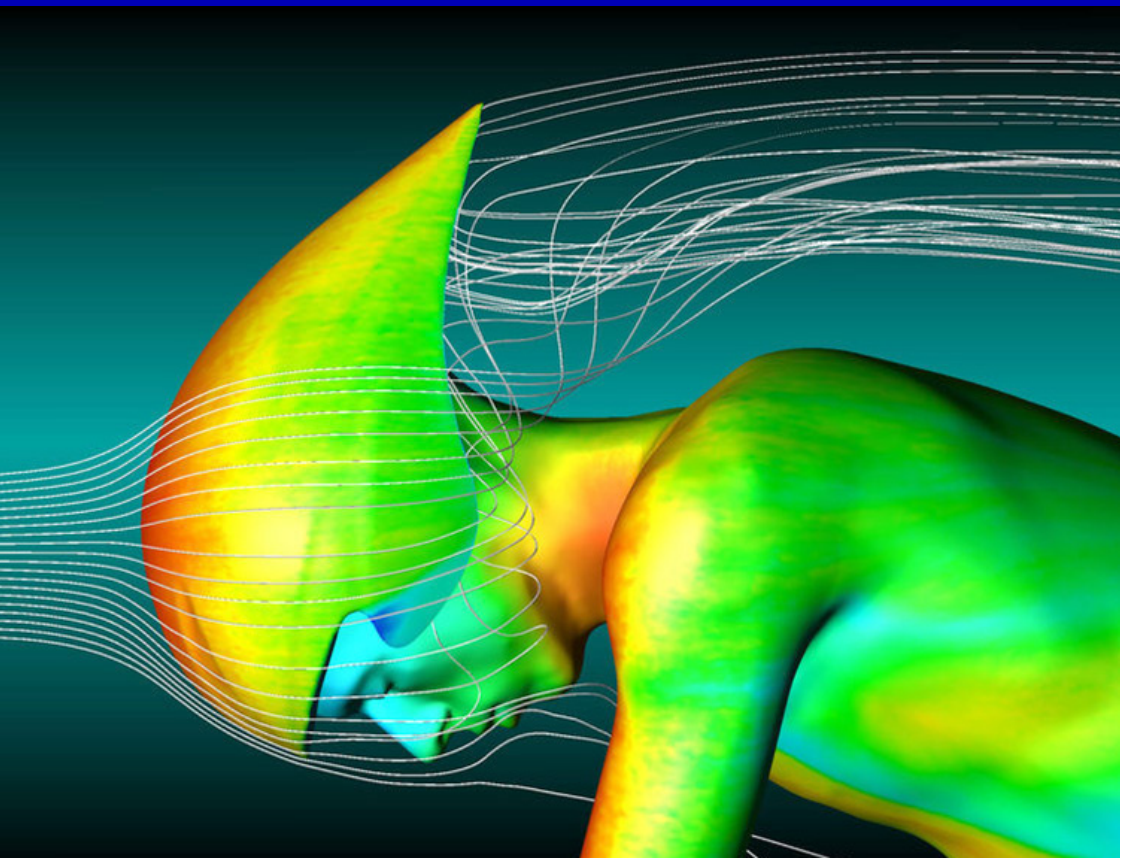
Delft Enterprises

Delft Enterprises is the one-stop shop for entrepreneurship and spin-out companies of the Delft University of Technology. Delft Enterprises participates in innovative, early stage and technology-based spin-off companies of TU Delft. Delft Enterprises aims to empower and speed up the development of these startups, as part of the ambition of the University to turn scientific knowledge into economic value.

Delft Enterprises (2015)	
New spin-offs 2015	12
Exits 2015	2
Spin-out companies in portfolio	43
Total amount of funding raised by portfolio companies	> 100,000,000 M

Entrepreneurship Education (2015)	**# Students**	**# EC**
Entrepreneurship Minors (30 ECTS per minor)	142	4260
Other entrepreneurial education (5-8 ECTS per course)	346	1883
Total entrepreneurial education	488	6143

Valorisation



Valorisation Centre

Knowledge valorisation concerns the creation of social and economic value based on scientific knowledge and skills. The Valorisation Centre stimulates and facilitates knowledge valorisation and provides the necessary support for TU Delft scientists and support staff. This includes R&D subsidies (funding for research projects), R&D project management, intellectual property, business development and cooperation with companies.

Grant agreements within the European Union's H2020

Rank among Higher Education Institutions	9
Projects	106
Of which coordinated projects (including personal grants)	41

Grants

Grants in 2015	20
ERC Grants	5
ERC Starting Grants	10
ERC Consolidator Grants	5
Dutch (Veni/Vidi/Vici) Grants	16
STW Valorisation Grants*	14
NWO Take Off	7

**STW Valorisation Grants changed to NWO Take Off Grants mid-2013*

Patents

Announcement new findings	80
Patents filed in 2015	39
Patents research contracts closed	22
Patents commercialised	33
Total patents in portfolio*	201

** Part of the TU Delft patent portfolio can be found online: www.patent.tudelft.nl*

Business Relations - Contract Research

Total agreed framework agreements	15
New agreements (in 2015)	1
Extended agreements (in 2015)	4
New consortia initiated	5

TU Delft Alumni

Michel van Eeten during the Alumni Cyber Security Seminar

Alumni help students during the Career Cafe, 2 June 2016

Opening of Alumni Walk of Fame: Anka Mulder & Ronald Prins

Alumni Worldwide

Based on LinkedIn 2015

By country	
The Netherlands	70,947
United States	2,332
United Kingdom	1,673
Germany	1,585
Belgium	1,367
Spain	1,004
Italy	882
China	832
France	824
Switzerland	759
Other	9,371
Total	**91,576**

By company	
Shell	1,195
Rijkswaterstaat	590
TNO	526
Philips	513
Royal Haskoning DHV	446
ASML	436
KPN	324
Arcadis	267
Deltares	266
Heerema Marine	241

External relations

State Visit and Education Mission to Canada - signing ceremony of MoU between the University of Waterloo and TU Delft, 28 May 2016

Network memberships in the Netherlands and Europe

4TU: Eindhoven University of Technology, Twente University, Wageningen University and TU Delft
LDE: Leiden University, TU Delft, Erasmus University Rotterdam
CESAER: 51 Universities of Technology in Europe
IDEA LEAGUE: ETH Zurich, RWTH Aachen, Chalmers University of Technology, Polytechnic Milan, TU Delft
EUA: European Universities Association

Partnerships

Internal and external network relationships are crucial to our international strategic partnerships. They focus on linkages not only with academic and research institutions worldwide but also government contacts, as well as business and industry partners. These partnerships ultimately aim to find innovative solutions for today's global challenges in both a regional and international context. The external global connections are primarily based on researcher-to-researcher networks, their curiosity and focus bringing them together in matching areas of interest in research and/or education. In short, the University's international strategic partnerships focus thrives on these solidly built long-term faculty relationships of which a large number have grown into joint research initiatives over recent years, in both Europe and beyond. To encourage focus and maintain an initial overview of the University's global relations, the TU Delft community started the Delft Global Initiative, focusing on developing countries in Africa & South East Asia as well as the 'cross faculty country teams' aiming to share knowledge and networks in specific countries, such as Brazil, Canada, China and India. The TU Delft Business Relations Unit has recently been exploring and developing relations with Germany.

University of Dar es Salaam Tanzania - course on innovation management and entrepreneurship.

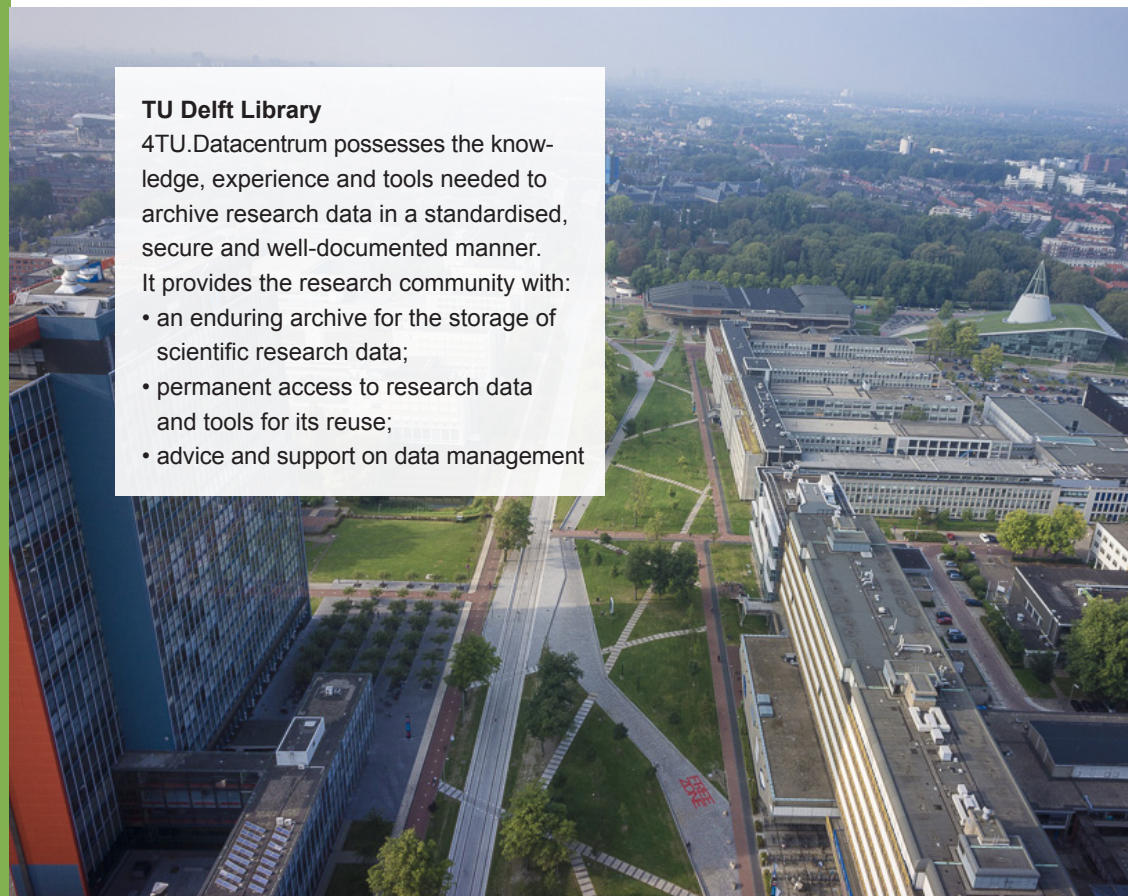
Campus & Facilities

An inspiring campus

Our campus provides an attractive environment for everyone working, studying or visiting TU Delft. It is organised in a manner designed to appeal to the lifestyle of today's students and staff, and is flexible enough to accommodate education, research, new and established businesses, guest accommodation, as well as sporting, cultural and other leisure activities. The planned Delft Technological Innovation Campus will be closely integrated with the University campus.

Research Infrastructure

To attract outstanding scientific talent, conduct ground-breaking research and train new generations of engineers, TU Delft heavily relies upon excellent and expensive infra-structure. This makes it possible for us to test, for example, the real-life practicality of models simulated on computers – something no other Dutch university can do on such a large scale. Thois is a defining element of TU Delft's profile within the international research landscape.



TU Delft Library

4TU.Datacentrum possesses the know-ledge, experience and tools needed to archive research data in a standardised, secure and well-documented manner.
It provides the research community with:

- an enduring archive for the storage of scientific research data;
- permanent access to research data and tools for its reuse;
- advice and support on data management

Research Facilities

Aerospace Engineering
- Aeroplane Hangar
- Cessna Citation II Jet Aircraft
- Cleanroom for Satellite Building
- Flight Arena 'Cyberzoo'
- Flight Simulator Simona
- Kite Laboratory
- Micro Air Vehicle Laboratory
- Propulsion Lab (being built now)
- Structures & Materials Lab
- Wind Tunnels (Low and High Speed Tunnels)

Applied Sciences
- Chemical Labs
- Fermentation Labs
- Molecular biology Labs
- Bioprocess Pilot Facility
- Imaging Facility
- Advanced Imaging Labs
- Laser Labs
- Cleanrooms
- Nuclear Research Reactor, incl. Neutron and Positron Beam-line Instruments and Irradiation Facilities

Architecture and the Built Environment
- Architecture Model Hall
  - 3D Printers
  - 3D Lab
  - Lasercutters
  - CNC Milling Machines
  - Render Farm
  - Sense Lab
  - Product Development Lab
- Architecture Library:
  - 35,000 Books
  - 14,000 Maps
  - 550 Atlases
  - 260 Magazine Titles

Civil Engineering and Geosciences
- Cloud Lab
- Geodesy/GNSS Lab
- Smart Mobility Lab
- Drones for Traffic and Geological Research
- CT Scanner
- High Pressure & Temperature Facilities
- Geo-technical Centrifuge
- Macro Lab
- Micro Lab
- Biohazard 1 Wastewater Treatment Lab (ML1 lab)
- Water Engineering Experimental and Analytical Lab (e.g. GC, IC, HPLC, Water Isotopes)
- Flooms for Waves, Currents and Sediment Transport
- Jetski Mobile Platform for Coastal Fieldwork

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Industrial Design Engineering
- Applied Labs
- Consumer Research Product Evaluation Lab
- Foundational labs
- ID StudioLab
- Model-making and Machine Lab
- Perceptual Intelligence Lab
- Physical and Ergonomics Lab

Mechanical, Maritime and Material Engineering
- Cleanroom for Micro/Nano Engineering Lab
- Driving and Racing Simulator Labs
- Fluid Mechanics Lab
- Graphene and Thin Film Deposition Lab
- Materials Lab
- Mechatronics Lab
- Perfect Reactors Lab
- Process Technology Lab
- Robotics Lab
- Flume Tank and 2 Towing Tanks
- Delft Lab for Neuromuscular Control
- AGV-Lab
- Optics Lab
- Fuel Cell Lab
- Hexamove/-pod
- Cavitation Tunnel

Electrical Engineering, Mathematics and Computer Sciences
- Else Kooi Lab, Cleanroom for Microsystems
- Electrical Sustainable Power Lab
- INSYGHTLab for Computer Vision, Interactive Intelligence and Visualisation
- Radar Labs with PARSAX and MECEWI Radars and the Radar Facilities TARA and IDRA
- DUCAT Antenna Measurement Chamber
- Photovoltaics Laboratory
- Tellegen Hall

Technology, Policy and Management
- Policy Analysis Simulation Lab
- Serious Game

More information can be found at: labs.tudelft.nl

History of the University

1842-1864: Royal Academy

On 8 January 1842, King Willem II founded the 'Royal Academy for the education of civilian engineers, to serve both nation and industry, and of apprentices for trade'. The academy also educated civil servants for the colonies and revenue officers for the Dutch East Indies.

1864-1905: Polytechnic School

An Act was passed on 2 May 1863 imposing regulations on technical education as well as bringing it under the influence of the rules applying to secondary education. Then, on 20 June 1864, a Royal Decree was issued ordering the Royal Academy in Delft to be disbanded to make way for a new 'Polytechnic School'. The school went on to educate architects and engineers in the fields of civil engineering, ship-building, mechanical engineering and mining.

1905-1986: Institute of Technology

On 22 May 1905, an Act was passed acknowledging the academic level of the Polytechnic School's technical education and it became a Technische Hogeschool, or Institute of Technology. Queen Wilhelmina attended the Institute's official opening ceremony on 10 July 1905. The Institute's first Rector Magnificus was the Professor of Hydraulic Engineering ir. J. Kraus. The Institute was granted corporate rights by an Act passed on 7 June 1956.

1986-present: Delft University of Technology

An Act which took effect on 1 September 1986 officially transformed the Institute of Technology into Delft University of Technology, abbreviated to TU Delft from the Dutch name *Technische Universiteit Delft*.

Rankings

THE Ranking

	World	Engineering & Technology	Reputation Ranking
2016	59	20	51-60
2015	65	19	51-60
2014	71	19	42
2013	69	23	51-60
2012	77	32	51-60
2011	104	22	49

QS Ranking

	World	Engineering & Technology	Natural Sciences
2016	62	-	-
2015	64	19	66
2014	86	16	79
2013	95	15	63*
2012	103	18	91
2011	104	18	79

Leiden Ranking

	PP top 10 %	MNCS	UI
2016	75	-	-
2015	102	-	4
2014	148	141	4
2013	164	168	2
2012	-	-	
2011	115	99	

* Cells containing the symbol "-" are positions that are not (yet) available for the concerning ranking and year

ARWU Ranking

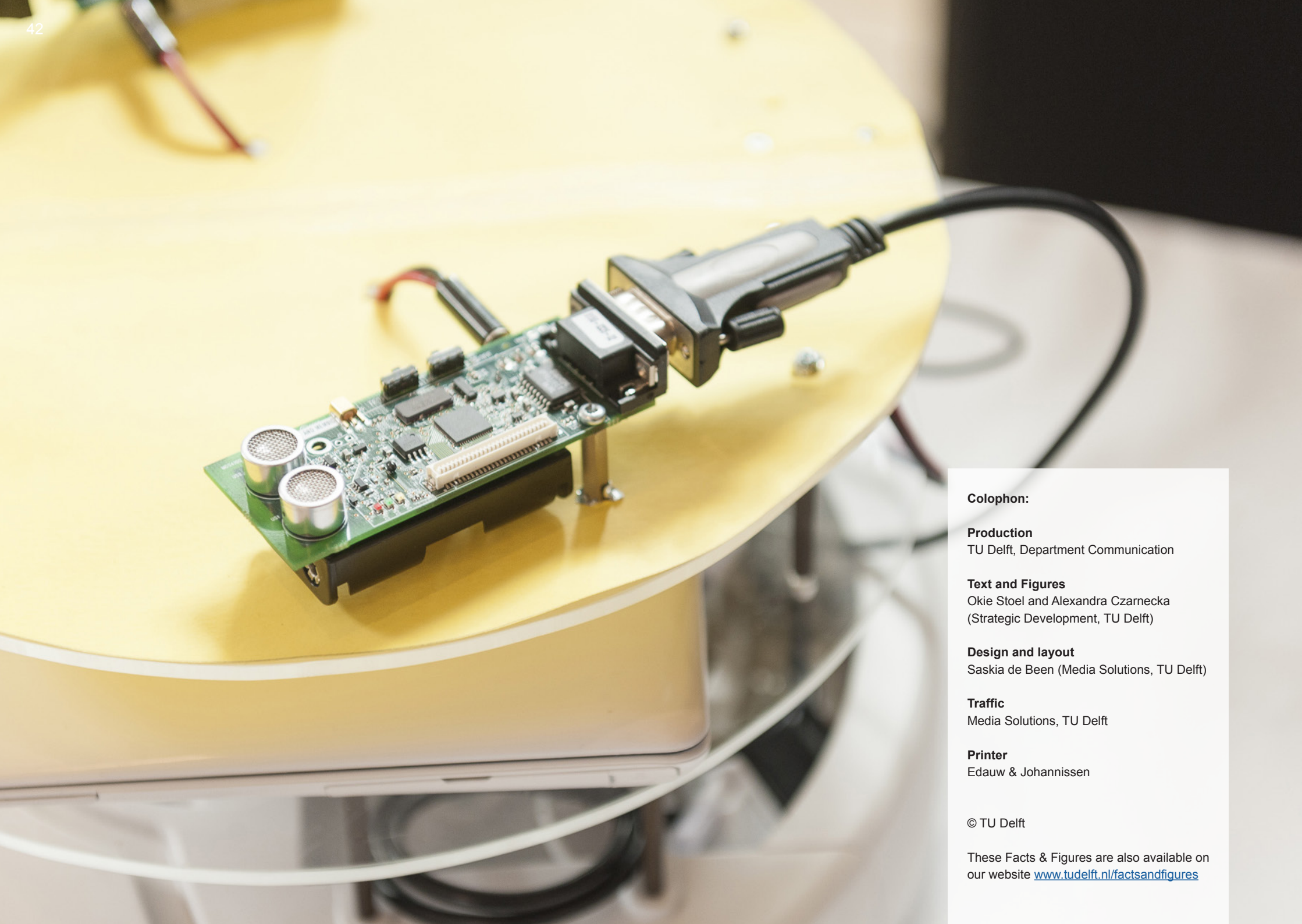
	World	Field Engineering & Technology	Subject Computer Science
2016	151-200	101-150	-
2015	201-300	101-150	101-150
2014	201-300	101-150	101-150
2013	201-300	101-150	101-150
2012	201-300	76-100	101-150
2011	151-200	76-100	

The City of Delft

The city of Delft is strategically located at the heart of the Dutch knowledge economy and is within easy reach of the TU Delft campus by bike or public transport. The close connection between the city and the University brings together the best of both worlds. Over the past two decades, Delft has rapidly transformed from an industrial centre into a hub for the Dutch knowledge economy. Delft is a historical city that was established in the 13th century with a rich history including the world-famous Delft Blue china, celebrated painters such as Johannes Vermeer and scientists such as the inventor of the microscope Antoni van Leeuwenhoek. Delft's slogan is: 'Delft, creating history'. But Delft is also constantly looking to the future to ensure the city remainsvibrant and prosperous. The university and companies based in Delft play an important role in this mission.

City of Delft statistics
Square kilometres: 24
Population: 101,033
Cafés, bars and restaurants: 296

Connectivity
To Rotterdam by car: 15 km, 20 min
To Rotterdam by train: 10 services per hour, 15 min
To Amsterdam by car: 66 km, 44 min
To Amsterdam by train: 4 services per hour, 58 min
To Schiphol airport by train: 6 services per hour, 40 min



Colophon:

Production
TU Delft, Department Communication

Text and Figures
Okie Stoel and Alexandra Czarnecka
(Strategic Development, TU Delft)

Design and layout
Saskia de Been (Media Solutions, TU Delft)

Traffic
Media Solutions, TU Delft

Printer
Edauw & Johannissen

These Facts & Figures are also available on our website www.tudelft.nl/factsandfigures